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ABSTRACT

Assembled to provide an introduction to computer and communications technology, systems analysis, and networking for school librarians, this booklet brings together articles, addresses, and teaching materials prepared by the compilers for journals, conferences, and a series of continuing education courses for school librarians in Australia. The collection is divided into three sections: (1) a set of background readings, (2) a series of working notes on information system technology and processes, and (3) course outlines. Among the background readings are: "Technology, Systems, and School Librarians: An Approach to Continuing Education," "Information Retrieval in the School Library," "Sharing Technology in School Libraries," "School Libraries and Networks," and "Computer Applications for School Libraries: Some Considerations." A selected bibliography and glossary of acronyms accompany the papers. The working notes address such topics as computer technology, machine readable cataloging (MARC) and bibliographic records, keyword indexing, flowcharting, systems analysis, and system costing. Programs for 2- and 4-day courses on school libraries and information needs and a sample keyword-out-of-context (KWOC) index are appended. (JL)

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SCHOOL LIBRARIES AND TECHNOLOGY

A SOURCEBOOK

Marianne Broadbent

Dagmar Schmidmaier

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Centre for Library Systems

Kuring-gai College of Advanced Education

1981

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PREFACE

The Centre for Library Systems is a research centre established by the School of Library and Information Studies, Kuring-gai College of Advanced Education. It has been concerned with conducting research into library systems, specifically the implications of computer and communication technologies for library and information systems.

Over the last three years the Centre's activities have included the provision of continuing education programmes, consultancies, research and publications. The Centre is at present completing the first phase of a project to evaluate the use of key-word indexes in school libraries.

The implications of microcomputers for library and information systems in relation to educational uses and practical applications is another interest of the Centre. In 1981/82 the Centre will be offering a series of seminars on the use of microcomputers in libraries as well as providing a referral service for microcomputer software for library and information systems.

Dagmar Schmidmaier
Director, Centre for Library Systems

INTRODUCTION

Rapid developments in computer and communications technology have taken place since the mid 1970's. These developments have considerable implications for library and information services and present school librarians with opportunities to develop more innovative approaches to information retrieval in the education environment.

During the past four years we have been actively involved in introducing Australian school librarians to developments in computer and communications technology, the principles and techniques of systems analysis and the concept and practice of networking.

The genesis of much of the material included in this book was a continuing education course School Library and Information Needs - A Systems Approach first offered in March 1979. The purpose, scope and effects of that course are described in the first reading "Technology, Systems and School Librarians: an approach to continuing education." The course has now been offered five times in New South Wales; the three of us involved in developing that course have addressed school librarians on related topics in five states in Australia and at the 1981 combined LAA/NZLA conference in Christchurch, New Zealand.

This book brings together articles, addresses and teaching materials we have prepared for journals, conferences and continuing education courses. It

has been produced in this form to provide access to material on topics which are still in an embryonic state in Australia. From our experience there is a dearth of readable introductory material which can assist school librarians to familiarise themselves with computer and communications technology, systems analysis and networking. This book is not meant to present a comprehensive coverage of "school librarians and technology" but an introduction to the area. Neither is it meant as a substitute for the course "School Libraries and Information Needs - A Systems Approach", rather it may be used as a sourcebook by those wishing to develop courses along such a theme to suit local needs. In order to facilitate its use, this sourcebook is divided into three sections; section one is a selection of background readings, section two working notes; and section three, the programmes for the two and the four day courses, and examples of KWOC listings.

We would like to take this opportunity to thank the many librarians and educators who have participated with us in stimulating discussions on themes covered in this book and for the encouragement given to produce School Libraries and Technology: A Sourcebook.

Marianne Broadbent *Dagmar Schmidmaier*

TECHNOLOGY, SYSTEMS & SCHOOL LIBRARIANS*
AN APPROACH TO CONTINUING EDUCATION

by

Marianne Broadbent, Robert Broadbent
and Dagmar Schmidmaier

SCHOOL LIBRARIANS, SYSTEMS AND COMPUTERS

Computerised systems have been a feature of large and specialist libraries in Australia for some time, but the use of computer technology in school libraries is relatively new. Developments to date in Australia are limited, and SAERIS and the ASCIS project have concentrated on using machine-readable bibliographic records for copy cataloging and card reproduction services.

Computer and communications technology presents school librarians with great opportunities to develop more innovative approaches to information retrieval in the education environment. Unfortunately, education for school librarianship has only recently begun to deal with the implications of this new technology for school libraries. Consequently school librarians have felt that computers are not relevant for their situation.

In an attempt to give school librarians the opportunity to familiarise themselves with this whole area, a continuing education course - School Libraries and Information Needs - A Systems Approach - was developed by the writers. The course has now been offered five times, very successfully, in a variety of situations with the number of applications always exceeding the number of places available.

The purpose of this article is to present the objectives and scope of the course, review the course structure and content, and examine the effect that the course has had on participants and library services generally in New South Wales.

* LASIE 10:5 (1980) p.20-28.

COURSE OBJECTIVES

The principal objectives identified for the course were:

- to familiarise school librarians with computer and communications technology and their applications for library services

- to provide some practical experience with computer applications

- to introduce participants to the principles and techniques of systems analysis and their relevance to meeting the information needs of schools

The corse was designed to focus on recent developments in computer and communications technology, provide "hands on" experience, and introduce participants to systems analysis. Each of these areas presented challenges in determining the breadth and depth of their coverage. Although a number of school librarians had approached the organisers about the possibility of conducting such a course, it was difficult to anticipate initially the background and orientation of those who would actually apply.

The course was designed as a continuing education activity for practising school librarians. It was co-sponsored by the Northern Districts Education Centre (Sydney) and the Centre for Library Systems, Kuring-gai College of Advanced Education. Financial support and official endorsement by the New South Wales State Development Committee and its Educational Region counterparts enabled the participation of librarians from both government and non-government schools at primary and secondary levels.

COURSE STRUCTURE

Developing an appropriate structure for the course presented problems in terms of judging an acceptable length and time-frame. The course was first offered on a statewide basis over four days, on two consecutive Fridays and Saturdays. It was thought that this arrangement of dividing the course into two two-day segments would give participants a break to assimilate concepts presented and to consider possible practical applications in their own situations, as well as to do some reading for the second segment.

This pattern was repeated for the second statewide course in November 1979.

When the organisers were approached by participants in the two statewide courses to mount the course on an educational region basis it was necessary to reduce the length of the course to meet regional inservice education funding requirements. The course has now been offered in two regions - one metropolitan and the other a country region. The Regional courses run over two consecutive days and include an evening session on the first day.

For the regional courses participants were sent a considerable amount of pre-course reading material. This approach was very successful in overcoming the difficulties of presenting the shorter course without a five day break in which to assimilate the many new ideas. Participants were conscientious and made a real effort to grapple with the information and concepts presented in the reading. Many arrived "steeped" in systems, somewhat wary, but motivated to come to terms with those areas they had not understood.

COMPUTER & COMMUNICATIONS TECHNOLOGY

The first section of the course focused mainly on the first two objectives - familiarising school librarians with computer and communications technology and providing some practical experience with computer applications.

Each course began with a lecture by Dagmar Schmidmaier on technological change and its implications for libraries. Features of the communications system in Australia were outlined together with requirements for an effective data communications network. It was impressed upon participants that man has more technology available than he is able to use at present.

Different aspects of computer hardware and software were introduced in a joint session usually led by Allen Hall and Dagmar Schmidmaier. (In each of the Sydney based courses, Allen Hall, lecturer at Kuring-gai CAE and the first executive director of CLANN Ltd., took an active part in lecturing and leading workshop groups.) Participants were then taken on a tour of the Computer Centre in the college in which the course was being held - Kuring-gai CAE for Sydney-based courses, Mitchell CAE, Bathurst for the Western Region course. In the later courses, this segment concluded with the film *Basic Computer Terms*.

INDEXING

Participants gained their first "hands on" experience during a KWIC/KWOC indexing workshop in the afternoon of the first day of the course. This involved compiling "Key-word-in-context" and "Key-word-our-of-context" listings by preparing data card layout sheets, punching the cards and running the punched cards through the college computer system. Examples of both KWIC and KWOC listings were printed on two part paper so that each participant could have a sample sheet to keep.

Although the colleges concerned now have on-line data entry systems operating, it was found that having participants complete data card layout sheets and punch these onto cards was a very effective approach for assisting those with no previous experience to come to an appreciation of the concepts involved in producing computer generated lists. The use of the simple Kuring-gai KWIC/KWOC indexing program provided a "responsive" introduction to utilising computer technology. It also served as a useful prelude to the more complicated intricacies of preparing MARC format catalog records.

MARC CATALOGING

After a lecture introducing machine-readable cataloging, participants were again divided into groups for another "hands on" session. This time their task was to prepare machine-readable catalog records for the production of an alphabetic bibliography. It was felt that there was no substitute for understanding the concept of the MARC format than the preparation of actual records in MARC format. In the four day courses, participants punched these onto cards and received their output the next day. The two day course did not allow time for this. Instead, sample printouts were distributed and their contents discussed.

Thus, a key concept in computer technology - that a single data entry may provide many access points - was confronted and grasped by participants through completion of a simple index in the form of a KWIC/KWOC listing as well as the more difficult catalog records in MARC format. These were processed quickly so that immediate feedback was available. In the words of participants these sessions succeeded in "totally demystifying" the whole area of computer

applications to library systems.

NETWORKING

Some of the theory behind the development of networks was presented in a lecture session which examined the implications of computerized network developments for school libraries. Participants were not encouraged to see network developments as an easy and all-encompassing panacea, but as a new approach to solving problems which could reduce the dependency of a user on one local information source by providing him with many access points. The significant features of networks in terms of a contractual agreement, defined goals, separate funding and management structures were discussed, along with the fact that network developments are related to technological developments, with the main asset of the network being its machine-readable data base. This session usually ended with a lively discussion on how networks should develop and how they might be funded in Australia.

In the four day courses, participants had the opportunity to see a computer-based network in operation with a demonstration of the CSIRONET on-line information retrieval system. The Department of Library and Information Studies at Kuring-gai College of Advanced Education has a terminal linked to CSIRONET so that students can gain some familiarity with the experience in searching computerised data bases. Participants were able to benefit from this, viewing a number of profile constructions and searches on the CSIRONET data base.

SYSTEMS ANALYSIS

The second section of School Libraries and Information Needs - A Systems Approach focused on the third course objective - introducing participants to the techniques and principles of systems analysis and their relevance to meeting the information needs of schools. An introductory lecture on the systems approach as a way of coping with change stressed the desirability of examining the adequacy and effectiveness of various library operations in the context of the total system.

The techniques and procedures that may be used in a systems study were then outlined. These included establishing clear goals and objectives, documenting current procedures using flowcharting methods, evaluating the appropriateness of current procedures, and designing new systems.

Throughout the lectures and discussions in this segment, participants were encouraged to re-examine and evaluate their current library organisation, procedures, practices and attitudes. It was strongly suggested that there were two misconceptions about libraries which needed to be overturned: firstly, that library operations could not be costed in the same way as business organisations; and, secondly, that it is too difficult to set objectives for libraries.

SYSTEM STUDY

Continuing to follow the maxim of learning by doing, participants were divided into groups and challenged with a task in the form of a limited system study which aimed to give them the opportunity to apply the techniques of systems analysis outlined earlier in the morning.

Different tasks were set depending on the length of time available to complete the study. In the longer course, three hours was available for this task. The two day course allowed only an hour and a half.

In the four day statewide courses, the immediate problem with which each group was presented was one in which the Regional Director of Education had requested a submission from the Group on the establishment of a regional technical processing centre, initially to serve schools in two districts of the Region. The Regional Director was said to be concerned about the lack of co-ordination regarding acquisitions and circulation of resources in schools and centres in the region, and, also, in the amount of time school librarians spend in cataloging and classification - tasks that are repeated in many schools.

Each group was asked to prepare a submission concerning the establishment of a computer-based regional technical processing centre for presentation and discussion at the following session of the course. Suggested procedures for completing the task were given to each group as a guide. Details of TECHNILIB, a technical processing centre established by Public Libraries in Victoria, were supplied to provide an example of an operational model of a regional processing centre.

As part of their submission, participants had to document and cost their current technical processing procedures and prepare an evaluative statement concerning the suitability of present procedures to meet current needs and possible future developments in the region. Then they were asked to discuss guidelines for establishing the regional technical processing centre, including objectives, formal structure, and advantages and disadvantages of such a centre.

Obviously the three hours allocated to such a task were insufficient for a detailed and comprehensive treatment of the issues raised. However, it did give group members the opportunity to work through the procedures involved in applying and techniques of systems analysis to a given situation. Feedback from participants certainly indicated that the exercise was a most valuable one in that they now had some guidelines established and available for use and adaptation in their own situations. Participants also indicated that they had developed a better appreciation of the planning needed for future activities which they might undertake.

In the shorter regional courses, the task was to examine the types of issues and activities associated with school-level participation in two different systems - in a TECHNILIB-style network, and in the ASCIS project. Flowcharts were provided documenting school level activities incurred in each of these systems. In practice, this session was also used to discuss issues not adequately covered to date due to time constraints, and to answer participants' questions concerning developments that had only been touched on in lecture sessions.

AUSTRALIAN DEVELOPMENTS

Existing network developments in Australia were covered in the final lecture session. Participants were asked to think about the relevance of existing networks to the school community. Were there specific needs and objectives in the educational environment which suggested that schools should build up and use their own data base? Was it advisable for different states to build up their own data bases? How can appropriate data bases be used to benefit students and teachers in a given area? What types of developments are

best suited to national, state, regional and local levels? How can school librarians use their knowledge and understanding of computers and communications technology to bring about more innovative and resourceful approaches to information retrieval in the education environment?

LOCAL DEVELOPMENTS

The final section of each course consisted of two segments. Firstly, some recent local developments in the area of computer-based library services were outlined by a panel of speakers. Ranging over the four courses, these included a number of recent graduates from the Graduate Diploma in Teacher Librarianship course at Kuring-gai CAE, together with Allen Hall (speaking about CLANN Ltd.), Vic Rae from Liverpool educational region (on that region's COM-fiche KWOC union listing), Sue Parks (from Library Services, NSW Department of Education), and previous continuing education course participants discussing changes they had made to manual systems to improve services to staff and students.

These sessions were usually chaired by an education administrator. In each case, these chairmen challenged the school librarians to present them with relevant proposals in a manner which could be understood and the implications appreciated by administrators.

FINAL SESSION

In the final hour of each course, participants were asked to review their time spent learning about and experiencing computers, communications technology and the systems approach to school information needs. From the discussion which generally ensued in this hour it appeared that participants felt that they had greatly benefitted from attending the course. Though many stated

that they were exhausted and"reeling" from the pace, content and demands of the course, they were keen to have a "follow-up" in five or six months time for further input and updating, and as an incentive to utilise the information gained and skills developed as part of the course.

Others stated that they realised they "hadn't been thinking" for years. After the initial shock of having traditional attitudes and practices questioned, they had developed a new confidence to actively participate in shaping services to meet the current and future demands of their own environment. This very positive response was also reflected in the evaluation forms completed anonymously by participants.

THE EFFECTS OF THE COURSE

To date, eighty-eight school librarians, including a number of regional library consultants, have completed the course School Libraries and Information Needs - A Systems Approach. There is a continuing demand for the course which the organisers cannot meet at present. Each time the course is offered, the number of applicants far exceeds the number of places available. This is despite the fact the participation in the course usually involves considerable after-hours and weekend time.

For each course, preference in the selection of participants was given to experienced and professionally active school librarians, who had not completed a Graduate Diploma course at Kuring-gai CAE in the last two years. Thus, among the participants was a considerable number of experienced school librarians who were active in local librarians' groups and who were at a stage of "readiness" in their professional development where they could most benefit from such a course. It was also hoped that they would, in turn, act as catalysts

or initiators for developments in their own regions and local areas. This has occurred in a significant number of cases.

The range of valuable activities undertaken as a direct result of participation in the course is quite considerable. These include union lists in KWOC format of periodicals, videotapes and audio-visual resources by a number of groups. Others are using the KWOC format for parts of school collections for which there has been no appropriate information retrieval tool previously.

A KWOC Users Group has been established to handle enquiries from school librarians about different applications of the Kuring-gai CAE KWOC format. This is basically a self-help group where those who have already worked on a particular type of listing, say video-tapes, will assist a beginner in that field to learn the most effective way of preparing information for processing.

A microcomputer group has been studying possible school-level applications of microcomputers which are now available in many schools, particularly high schools. The group is currently preparing specifications for a circulation system and has kept in constant contact with officers of the NSW Department of Education working in this area. The purpose of this contact is to ensure that such officers understand the requirements of possible library applications and that these may be considered when new tenders are called. This group has also provided information concerning the areas where microcomputer configurations which schools tend to purchase are not suitable for library applications.

Other course participants have reorganised collections and systems after doing formal or informal system studies on their current procedures. Examples of this include one librarian who

is developing a subject index to her collection, and a number of librarians who have reorganised their fiction collections into theme areas. They felt that this was the way students tended to approach fiction reading. While this reorganisation did not involve the librarians in any application of computer technology, changes were made to provide more appropriate student and teacher access to resources. This type of re-evaluation of existing services and procedures is seen as a particularly important, though often intangible, desired outcome of the course.

The increased understanding of computer and communications technology and network developments in Australia renewed the confidence of many librarians in working towards more substantial changes in current processing procedures. Many participants were unaware of some of the developments taking place and did not realise the potential for their own participation. It had not occurred to some librarians that they could and should have a say in the development of services that may affect them and their working environment.

Groups in a number of regions are now meeting to formulate proposals concerning the shape of future library and information services in their region. These include developments which can take place at the regional level as well as submissions to be forwarded to groups such as the NSW Department of Education's Library Services to provide input that should be considered in the development of statewide plans. The continuing "ripple" effect of the courses is difficult to measure. However, many course participants are members of regional library committees or committees of professional associations, such as the Schools Section of the LAA. In this capacity their increased awareness of the information field is continuing to have an effect on the nature and scope of other continuing education courses at local, regional and Statewide levels. The image

of school librarians in the eyes of administrators and their teaching colleagues has also been seen to be considerably enhanced when some understanding and appreciation of computer and communications technology is shown.

When it is recalled that school librarians service approximately 23% of the population on a daily basis and incur greater expenditure nationally than public libraries in Australia, the importance of providing school librarians with an opportunity to familiarise themselves with current computer and communications technology, and the principles and techniques of systems analysis may be realised. They may be better able to take an active part in the planning of Australia's future library and information services.

The effect of the continuing education course School Libraries and Information Needs - A Systems Approach have been considerable, both for the course participants and for the development of school library services in NSW. School librarians are aware of the potential application of computer and communications technology in their environment and are working towards using that potential not for "more of the same" but for the improvement of services to staff and students.

INFORMATION RETRIEVAL IN THE SCHOOL LIBRARY*

Dagmar Schmidmaier

MORE RESOURCEFULNESS NEEDED

The theme of this conference - "Being Resourceful" - is appropriate for the school librarian who has had to survive in a somewhat underprivileged situation in the total education environment. The school librarian has of necessity shown that he/she is resourceful in order to carry out the tasks required. If one examines that most impressive list of tasks set out in Education for School Librarianship[1] and the statement prepared by the NSW Teachers' Federation, the first reaction must be one of incredulity at the expectation that these achievements should be found resident in a single body. Let us just examine the breakdown of these tasks into broad areas:

(a) Administration

(b) Curriculum development

(c) Teaching

(d) Librarianship i. services ii. processes

Resourcefulness has certainly been shown in some of these areas.

* Adapted from a paper presented at ASLA VI Conference August 28 - September 2, 1978.

In the current literature, the emphasis has been on the role of the school librarian as curriculum advisor, that is, as an integral part of the teaching team. Librarians see the library as central to the educational process in primary, secondary and tertiary education. Adoption of the terms "Resource Centre" or "Library Resource Centre" (LRC) highlight the library's central role in the school, both physically and educationally.

But do teachers see it this way? Perhaps librarians need to be more resourceful in the way they "sell" their services.

The objective of any information agency, LRC, community library or special library should be to fulfill the information needs of the community it serves, with emphasis on SERVICE - in this case the school population, students and teachers. The retrieval and dissemination of information is therefore the primary goal to be met. In order to achieve this goal materials must be identified, acquired and processed. These tasks fall under (d) Librarianship ii. Processes. This area, generally referred to as technical services, is the area where school librarians need to exercise the resourcefulness they have displayed in other areas. "Resourcefulness" in the Shorter Oxford is a "capability in adapting means to ends in meeting difficulties".

In my experience school librarians have displayed imagination and flair in the development of teaching programs for the LRC and in some of the services provided. However, this resourcefulness has been noticeable by its absence in the processing areas. In these areas there has been an emphasis on traditional methods, I suspect, in an attempt to acquire respectability in the eyes of the professional librarians. These traditional methods have been carried over into proposed

computerised systems without question! It is not too late for school librarians to look behind and beyond all traditional processing systems before embarking on computerisation and appraise their suitability to meet the goals and objectives of the school library or LRC.

THE SYSTEMS APPROACH

The systems approach in the broadest sense implies an awareness of the world around us, that is, an awareness of all other systems, private or public with which we interact. It means that all of these systems interact and influence each other to greater or lesser degrees and influence all actions. If we take as our model the LRC within a particular school, we have immediately a complex interrelation of systems. The LRC itself comprises a number of sub-systems which consist of people, staff and users, materials, tasks, facilities. All of these components must work in together to form the whole so that the LRC will function effectively and meet its objectives.

However, the LRC must also interact effectively with the school as a whole and on broader levels with the education department, other educational institutions, the community, the suppliers of materials and so on.

The central role of the LRC as envisaged by librarians supports the systems approach, that is, the interaction of all components of the learning process within the school system. The success of the systems approach relies upon the recognition of movement and change in all systems. The LRC should respond to change and at times initiate change when certain stimuli are received from the interdependent

systems, for example, changes in the curriculum, school administration, etc. Over the last decade some of the most significant external stimuli experienced by information agencies have been from the telecommunications and computer industries.

In general the response of information agencies to these stimuli has been enthusiastic, showing a willingness and appreciation to use the technology to improve existing systems. However, the time for unrestrained enthusiasm is over. Computerisation of library procedures and processes has been well tried and there are sufficient guidelines (successes and failures) which indicate the suitability of automating certain library procedures. It is no longer a question of whether computerised library systems are feasible - they are not only feasible but essential and economically viable. The important factor is to establish, within each environment, which of the existing systems can benefit from automation. It is for this reason that school libraries should firstly look at their goals without being constrained by existing procedures. This is vital when planning automated systems.

THE COMPUTER TECHNOLOGY AND THE LIBRARY

We have all experienced some aspects of computerised library systems as a user, for example, in the area of circulation control there are now many university and public libraries which use a computer controlled light pen or wand system which 'reads' printed bar codes which identify the borrower and item borrowed. These systems are also widely used for stock control in the retail trade. Other computerised library applications that are now commonplace include cataloging

and information retrieval systems.

Those libraries which are concerned with the control of a large volume of items have experimented with the computer for stock control - and for libraries and other information agencies the central file of a stock control system is the catalog. Traditionally, libraries have been able to afford only one copy of the catalog, and its format during the first half of the century has been predominantly the 5 x 3 card. The cost of creating and maintaining more than one copy of the card catalog has been prohibitive and therefore this one copy has been located in the public area and used by both the staff and users, a factor which has put severe limitations on staff access, particularly in large library systems. The use of the computer to create and maintain the catalog, frees us completely from traditional thinking about the catalog. It is now possible to think in terms of a central bibliographical file, a master file (in machine readable form) where all relevant items for a record are recorded - the data base concept.

A data base may be defined as a centralised collection of all information which is stored in a meaningful manner and may be used for one or more related applications.

The data base concept implies

- the use of a computer
- that information is stored <u>once</u> only
- that this information may be used for a number of different applications.

Furthermore, the physical location of the data base (and the computer) is not important because of the flexibility of production of output, for example, catalogs or listings. Access to the data base (catalog) can be via a terminal (on-line) or via hardcopy output, the latter in a variety of formats, microform or printed. Examples you will have seen include computer phototypeset catalogs and bibliographies, for example, ANB, and public library catalogs or microfiche catalogs.

Some systems produce catalog cards but this format is one that will be too costly to support in the long term, in that the extensive manual task of interfiling the cards produced by the computer into the existing catalog, remains. Twentieth century technology has been used to produce a nineteenth century product.

Therefore, the data base concept frees us of the need to maintain a large number of single purpose files, e.g. an order file, an access file, catalog, shelf list, loan file, etc. In fact, the file maintenance becomes transparent to the librarian as it is stored and maintained by the computer.

The data base concept also means that the form of the output is the user's decision. This decision may now be made by taking the needs of the users, for example, primary school children, into account.

The catalog no longer has to serve primarily as a stock control file for the librarian because the flexibility of a machine readable file allows a tailor-made catalog to be produced, for example, for the primary school child, while a more detailed format may be produced for the librarian

in the form of a shelf list. The production of specialised subject bibliographies may be produced to help in curriculum planning indicating in advance the resources available to support the programme. The data base system provides a new approach to the retrieval and dissemination of information - it provides extreme flexibility by allowing a variety of outputs, for example, catalogs, listings etc., and frees the librarian of a significant proportion of para professional work. I believe these developments will be really significant when schools begin to function in regional networks. In New South Wales we already have any number of voluntary groups cooperating at the regional level and it is only a small step to look at this on a larger scale.

PROBLEM OF LIBRARY TRADITIONS

The introduction of computerised systems for bibliographical control means change and I would urge school librarians to take this opportunity to appraise their existing procedures, to question very closely their objectives. Given the objective of the LRC is to retrieve and disseminate information in the most effective way, how is this best achieved? Traditional methods of bibliographical control based on standards developed for large research libraries has been the model accepted by school libraries. Attempts to apply the cataloging code and classification, albeit with modifications, have been in my opinion the greatest obstacle to progress and the use of that resourcefulness so adequately displayed by school librarians in other areas.

There are certain standard axioms based on library traditions that are put forward time and time again apparently without evaluating their suitability for the school library - such

axioms as all materials should be housed centrally; all items must be stored on shelves; all items must be cataloged; all catalogs should be made on cards; accession registers must be maintained; students must be taught the mysteries of the catalog; etc. etc. etc. It is not until all of these supposedly inviolate assumptions have been questioned and evaluated that any real development can take place. The standards, rules and codes that we use today in 1979 for bibliographical control are based on philosophies developed at the turn of the century and are based on the premise that libraries are concerned first and foremost with things bibliographic. As far as school libraries are concerned, this is not true.

In Australia we have followed developments in the United States. There the Library of Congress has had an enormous influence on things bibliographic through its distribution of printed cards which began in 1911. Since that time there has been a "revolution" in the volume of information produced and the number of people using and needing information. Librarianship has pursued the philosophy of one code, one classification, one catalog for all users. This is obviously now untenable - how can we have one bibliographic code which will meet the needs of a child, scientist, layman, librarian?

The makers of codes have not and perhaps cannot look behind and beyond all those basic axioms mentioned. Revised editions of codes and other standards are constrained by existing practice and by vested interests and are not concerned with meeting needs of the 1980's.

SERVICE ORIENTATION

A professional ethic that is still widely held and practised is that users must be encouraged to find their own material and that those librarians who provide service are accused of 'spoon feeding'! It seems to me that school libraries have a problem here because they have a role in teaching information or research skills on the one hand and a role to provide information on the other.

I believe that libraries should be service oriented and that the non-acceptance of this by librarians will result in their demise. One only has to consider the mushrooming of alternative information centres who process information instead of simply supplying raw data. In our society today information is the fastest growing industry and the acceptance of payment for information is with us now - not something of the future. This will have significant implications on library services. School libraries need to accept this concept and come to terms with the fact that school libraries in the present form may not resemble in any way information centres that students will use in later life. It is also necessary that librarians get over the idea that users should or wish to know the idiosyncracies of the card catalog, or are going to spend hours or days searching for information in this same card catalog.

What should be taught is research skills and not "library skills" because I am still hopeful that with the aid of technology we will be able to provide user oriented systems as opposed to library oriented or closed systems. Traditional library systems fall into the latter category and are systems for the initiated.

COMPUTERS AND SCHOOL LIBRARIES - INFORMATION RETRIEVAL

School libraries are on the verge of computerised cataloging systems and because of the nature of collections and the goals and objectives of the school library I believe this will result in networks developing on a regional basis. The momentum and interest is at this level and should be encouraged.

To date there has been insufficient investigation into the objectives of catalogs and methods of information retrieval in school libraries. Computerised library systems have been here long enough for those involved in the school library to stop and evaluate the implications, to investigate alternative methods, to free themselves from traditional thinking and ask what would be best, rather than simply transferring existing systems to the computer. L. Jolley stated that the 'whole intellectual structure of our cataloging process will be radically changed'.[2] This has not happened yet. Perhaps the school library could take up the challenge? One of the vocal University Librarians in New South Wales has stated often that the national bibliographic systems, that is those designed primarily to meet the bibliographic needs of University libraries, should not be cluttered up with school libraries. However, from the school libraries point of view the reverse is true - why should school library files be cluttered up with bibliographic details that will never be used? None of the systems available in Australia has been designed for school library needs. History repeats itself, and we see that systems developed for big libraries, universities, state, etc. have been adopted by school libraries; systems which have different goals and objectives which emphasise the benefits of resource sharing to the universities; systems concerned with detailed bibliographic records using standards such as DDC 18, Library of Congress Subject Headings and Name Headings all of

which have little relevance for the school library problem.

With computerised cataloging systems it is fashionable to discuss certain goals such as resource sharing. However, the objectives by which this may be achieved will vary depending on the interpretation of "resource sharing". The school library should translate its goals into specific objectives that can be achieved within a specified time. If resource sharing is the goal, what are the objectives for school libraries? There are no easy answers and there will be different objectives defined in each state. The needs will be worked out at the regional and local level, because that is where it is all happening and that is why developments occurring at the regional level concurrently with the National level should be encouraged. Resource sharing at the regional level might be in terms of providing a centralised information retrieval (cataloging) service with a copy of the union catalog for all libraries in the region, thereby reducing the need for individual catalogs. It might extend to the concept of inter-library loan where the curriculum of participating schools is structured to allow for meaningful sharing of physical resources. It could also encompass centralised purchasing of expensive items, for example, films. There are no limits to the development of schemes at this level.

School libraries discuss the concept of the omnimedia catalog at length, but these discussions have been limited to "substantial" items, that is, those items that are traditionally cataloged. I would like to suggest the development of an information retrieval system with emphasis on provision of access to information irrespective of form, rather than the development of a system concerned with traditional bibliographic concepts. In this respect, school libraries have a lot in common with special libraries.

Regional centres should be encouraged to be flexible and experiment with the services and systems available. Society today is emphasising decentralisation and recognising the need for people to participate in decisions affecting their profession. A tiered structure is suggested because of the variety of needs that must be met by such a system. Obviously the details of such a system will take some time to determine and will vary from state to state, but it could basically consist of three tiers:

(a) national, to carry out long term planning and provide a national bibliographic data base for school libraries;

(b) state, to coordinate the operations of regional centres, provide leadership, planning and education;

(c) regional, to provide and maintain operational systems.

This division would meet the major requirements, administratively, bibliographically and technically. At the national level responsibility would be bibliographical and technical; at the state level, administrative and bibliographical; and at the regional level, technical and bibliographical.

School libraries are in a unique position to plan their development and step condidently into the post-industrial society and its technology. There are no major operational computerised systems in any of the states which represent a vested interest which must be taken into account in any proposed development. Each state has a bureaucracy which can provide the administrative framework for such a system, at both state and regional levels. It is to be hoped that the required planning will be done before rather than after systems become operational.

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SHARING TECHNOLOGY IN SCHOOL LIBRARIES*

Dagmar Schmidmaier

INTRODUCTION

"Pawns can only move forward. They can never retreat."

At the 1978 ASLA Conference I had the opportunity to give a paper which dealt with the concept of Information Retrieval in the School Library in its broadest sense. At that time SAERIS was about to become operational and ASCIS and TASCIS were waiting on the sidelines. My main thesis in that paper was that school libraries were in a magnificent position to develop a model for automation based on experience of other types of libraries and information systems. They were free of the variety of 'home spun' computerised systems hindering progress in university libraries. They had the opportunity to develop a framework for computerisation, to provide guidelines for systems applications at different levels of the education structure - at national, state and at regional and local levels. The intervening years have been significant advances in automation in school libraries with SAERIS well established, the ASCIS pilot project completed and TASCIS pioneering the way with an on line system for copy cataloging. I would like to emphasise that the experiments of the past 2-3 years are major ones and should not be ignored in planning future developments.

* *Sharing: Proceedings of the first combined conference of the L.A.A. and N.Z.L.A.* Sydney, L.A.A., 1981. p.534-539.

As with any systems developments, there have been differences of opinion about almost all aspects of the national trial, ASCIS, and its future as a national system seems doubtful, due to funding constraints and lack of agreement by the states on the objectives of such a system. It is not surprising that state differences have emerged as a major stumbling block in the operation of the ASCIS project. However the results of the study have provided information vital to further planning. The project was designed to obtain information

"not available from any other source, regarding:

a. the comparability of school library collections across the school systems

b. the desirable minimum size of a national data base and an estimate of the necessary growth rate for a national data base

c. the desirable strategies and forms for disseminating and accumulating cataloging data

d. the acceptability of cataloging standards and formats

e. the cost of developing and maintaining a computerised master file and production on that file

f. the acceptability of an automated card service and its delivery to schools."[1]

The ASCIS report updates and adds valuable data to that provided in the Downs and Young[2] study about size of collections, overlap and cataloging policies. However it is the assumption regarding the suitability and desirability of the 5 x 3 card as

the basic index to school collections that needs to be challenged. There is nothing new to be discovered in relation to the production of catalog cards by computer - most of the early library automation projects had card output, they used the computer as a 'super' sorting and printing machine. If one considers research done on the use of card catalogs in libraries, it is difficult to understand why this basic axiom was not reevaluated for school libraries when the opportunity arose.

The systems approach

"A player who uses two moves to do something possible in one is said to have lost tempo."

It is the questioning of fundamental assumptions of all library operations that is the basis of the systems approach.

The systems approach or systems thinking is based on the process of systems analysis and aims to show the characteristics of systems through methods of analysis. By identifying the characteristics of systems within a specific setting it should be possible to provide an environment in which decision making can take place in a logical and coherent fashion. This is the ideal and it is obvious when we look at our systems (e.g. education, transport, etc.) that all the best intellectual brains aided by technology have not allowed us to attain such insights into society's problems to identify the central problems and determine how they should be solved.

From the above it can be seen that the systems approach cannot provide all the answers, but it seems to me to be a worthwhile

approach to deal with the dynamic environment of information processing and dissemination, whether in libraries or other information agencies. The systems approach implies a continual evaluation and reevaluation of our operations, based on the assumption that all systems interact and that it would be foolish to analyse any one element of an operation or organisation without being aware of other elements which influence that operation or organisation. The computer has tremendous potential for librarianship in providing the mechanism to manipulate data in ways undreamed of previously. However it has also given us the stimulus to reevaluate our systems and priorities: Jesse Shera suggests that we "look at the computer, not for what it is, but as a symbol of what is taking place in the library world, a harbinger of innovation, change and the new era of the librarian's responsibilities to society. The computer, even in its present imperfect state, and one must confess that it is not yet really adequate for even the simpler requirements of the librarian, has already performed one very useful function: it has broken the hard crust of tradition and is forcing librarians for the first time to consider seriously the philosophical setting of their role in society." [3]

The school librarian operating within his/her specific environment should be aware of the extent to which external factors create pressure on the library's operations. Some of these external factors are the containing organisation, the funding bodies, the customers, the suppliers, monitoring agencies and competitors. For example, if the school library is considering changing any of its systems, such as introducing a computerised circulation system or joining a bibliographic network to obtain catalog products, these decisions will require support from some of the groups mentioned above and will certainly affect the customers as well as the internal operations

(systems) of the school library. By applying the systems approach the school librarian is attempting the successful interaction of all systems, it is an attempt to coordinate those external to the school library with the library's own internal operations.

The technology

> *"Development for its own sake is insufficient. There must be a keen purpose in every move."*

The brief provided by the Conference Organising Committee stated that small independent units (e.g. school libraries) could benefit from advanced technology through network and cooperative arrangements. While I would agree that this can be taken as a beginning hypothesis, it should not be accepted as a universal truth. It will be necessary for school libraries individually and collectively (for example regional groups) to identify their own objectives and then determine the benefits that will result, for each individual school as well as for a regional group of schools. The major developments to date have focussed on the macro level, that is to provide centralised bibliographic networks which would provide traditional cataloging products. I would like to explore briefly some possibilities at the local level, and see how these activities relate to cooperative or network systems.

It is the microcomputer which has had a major impact on schools over the last year and its acceptance by teachers has left the education system gasping; micros are popping up all over the place and enthusiastic teachers are developing software for them. This field is so dynamic

that it is difficult to keep up-to-date, particularly in relation to hardware. The software scene is less encouraging as there is little commercially available software overall and in the library area it is non-existent. Micro enthusiasts are therefore writing their own software, and while machine efficiency and speed of operation are not major considerations in many teaching applications, they are of concern for the production type systems which the library needs to run. To write efficient data processing systems for a micro requires an experienced programmer who has an intimate knowledge of the technical functioning of the machine. The cost of developing satisfactory software can be 3-4 times the cost of the hardware. However micros are here, and there are enthusiasts in the schools who want to make them work. Therefore there should be some mechanism set up to facilitate information exchange about the use of micros in the school library environment.

The Education Departments in each state have established units to evaluate hardware and software and to advise teachers on the use of micros, however their primary concern is with the use of micros as a teaching tool. In NSW there is a micro users' group (operating under the auspices of the Centre for Library Systems, Kuring-gai College of Advanced Education) which is looking at a general specification for a micro based circulation control system for schools. In Queensland (Brisbane) a number of interested school librarians are in touch informally and swapping locally developed software, for example class lists for overdue items. This grass roots activity is very healthy and should be encouraged, however more resources and support are needed. Such user groups need access to up-to-date information on hardware. They need programming advice and assistance as well as the resources to disseminate their activities as widely as

possible. A special unit to deal with library and information retrieval systems should be established.

The unpreparedness of the whole education system in relation to the micro invasion highlights a much more significant problem - that is the lack of planning on a statewide basis at a senior management level. The local initiatives are taking place in a vacuum. If the systems operating on a state (or quasi national) basis are considered to be valid then information should be filtered down to the local and regional level to indicate how individual libraries and or regional groups will interact with these systems in the future. There is little point in a region applying for funds to explore the feasibility of "another SAERIS". Any development at the regional level should be related to specialised needs of that region and based on an existing data base such as SAERIS or TASCIS. Although a region or state may wish to modify the data to produce a specific product, such as an annotated bibliography in a specific subject area, the basic data can be acquired in machine readable form. There are other activities which would also be appropriately handled at a local or regional level, such as circulation control or acquisitions, and it is the issues involved in developing local/regional systems that should be addressed by a planning group.

Some of the issues relating to circulation control may be given here as an example. Firstly, the individual functions of the circulation system should be considered by a school to determine whether computerisation can provide any benefits. The filing of loan cards and the overdue procedures are the most time consuming for the school librarian, particularly as many school libraries are staffed by only one librarian.

To relieve the workload for the loan procedure would require an on line system, for example one using light pens and bar coded labels and this may well be beyond the resources of the school library. Such a system is based on a machine readable record for all books and all borrowers. The on line system would also automatically produce overdue listings, in class order if that was required. If, on the other hand, we look at the overdue procedure as a separate function, it is possible to key in all overdue items and produce listings for class teachers. A program to do this has been written by the librarian at Caboolture High School in Brisbane. Another system which manipulated circulation data is in operation at Sydney Church of England Grammar School (North Sydney) where the boys wrote a simple program to analyse loans by classification number, thereby providing the librarian with valuable data on the use of the collection.

The question of the benefit of automating a specific procedure must be addressed by each individual school library as circumstances (and costs) vary from school to school. The complexity of on line systems must be carefully analysed, including the relationship to existing networks if a bibliographic file is to be created to support the circulation function. In order to allow school librarians to make informed decisions, a mechanism for exchange of information between user groups and networks should be established immediately. I would like to recommend the creation of a planning group, concerned with all aspects of automation in school libraries be established. I would envisage that this group would be involved in all aspects of systems development, hardware, software, networking and other cooperative ventures, as well as being a focus for information exchange activities.

The lack of resources in the present economic climate for education should encourage cooperation and network development particularly at the regional level. In NSW this is where one finds initiative and enthusiasm to experiment with alternatives and as the Department is divided into regions for administrative purposes this provides a structure for such experimentation. The planning group mentioned above could well be located in a regional office. In addition a region could provide computing back-up to individual schools. For example many of the micros in schools will not have a suitable printer attached. To print runs of orders or large overdue lists a high speed printer would be desirable and this could be located at the region's computer centre and used by individual schools as required. Basically the microcomputer is a single user system and is of limited value for school library applications at present. Small batch jobs, such as running statistics on daily loans are useful, however if any of the major library operations is considered, then the micro would have to be located in the library, for the sole use of the library. Even then, there are severe limitations as there is only one terminal, which means that only one person can use the system at any one time.

This scenario reflects the 1980 scene, where there were enthusiastic amateurs operating in isolation. However, it is already possible to connect a number of micros to a large storage disk system via a Constellation. Such a configuration has obvious potential for the concept of regional systems where the fixed disk would be located at the region and micros in schools would be connected to it via telephone lines. These developments are exciting, but one must be aware that the interconnection of systems will require more knowledge and expertise on the part of the user. One of the main attractions of the micro to many users is that it is

independent and under complete control of the user.

For school libraries, the main aim in using the computer, whether micro or mini, is to run operational systems to provide better service to users and better control for library management. Library files are relatively large and almost all applications require sophisticated information retrieval software to access these files. In general, these criteria are beyond the immediate capabilities of microcomputers, however specialised functions can be successfully implemented both at a local and regional level. It is up to you, the school librarian, to determine whether an application is suitable for automation. To experiment with the computer (for example to increase computer literacy) is one thing, and should not be confused with automating production systems on which the library is dependent. If any library system is to be automated the school librarian must be confident that the computerised system will provide at least the same level of service as the previous system plus some additional benefits.

It is said that myths survive because of the interpretations put on them by each generation. Shera's interpretation of the Daedalus/Icarus story is relevant here.

> "Our point here is that had Daedalus, the great engineer - the master technician - of his age, possessed a little more of Icarus' imagination, he may not have outsmarted himself by building the Labyrinth; and had the son paid more heed to the technology of flight, he might have been spared a fatal dunking. The moral is obvious: when there is an excessive gap between theory and practice, something is almost certain to come unstuck."[4]

IN SUMMARY

"Every pawn is a potential Queen."

In Australia in 1980, we have had multi level developments in computerised school library systems. There are the large bibliographic systems e.g. SAERIS and TASCIS providing cataloging products and looking towards providing more specialised systems in future, for example SAERIS aims to provide all products for items including circulation stationery and spine labels as well as on line enquiry of the data base. At the other end of the spectrum there are local initiatives by individual school librarians experimenting with microcomputers. Somewhere in the middle there are cooperative developments such as those based on the Centre for Library Systems at Kuring-gai College of Advanced Education where regional groups as well as individual libraries are experimenting with alternative indexes in an attempt to provide better service by spending less time on traditional cataloging procedures. The use of the KWOC computer produced index is based on the assumption that the bibliographic data is available when required via systems such as SAERIS. The distribution of the SAERIS data base on microfiche makes it possible for individual schools (and regional offices) to have immediate access to detailed bibliographic information.

It is an exciting time for school librarians, the scene is changing rapidly and the impact of computers has hardly been felt as yet. I believe it is essential that further research and experimentation be undertaken, in relation to the use of microcomputers locally and regionally and into the interface between these systems and state/national systems.

To conclude, a final word from Jesse Shera -

> "They (librarians) have been too absorbed in arguing the 'rightness' or 'wrongness' of the computer in the library situation ... What we think, or like, or prefer is quite beside the point. Hutchins is quite right, "One of the most important social changes in history is impending. We shall have to develop new social and political institutions to cope with it." We have no doubt that one of those new institutions will be a new kind of library."[5]

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Notes The quotations at the head of each section are from Len Deighton "Funeral in Berlin". Frogmore, Herts., Panther, 1978.

For further information on the KWOC experiment at KCAE see

SCHMIDMAIER, D. "KWOC and bibliographic control in school library." Review 8:4 (1980) p.9.

SCHOOL LIBRARIES AND NETWORKS*

Marianne Broadbent

THE TASK FORCE REPORT

In 1975 the United States National Commission on Libraries and Information Science (NCLIS) released a plan for that country's national library network.[1] One group of library services which appeared to be overlooked in the proposed national program was that based on school libraries. In January 1977 when controversy about the program was reaching a climax, NCLIS and the American Association of School Librarians (AASL) appointed a Task Force to delineate the position of the school library media program within the total framework of national networking.

The Task Force was given a brief to study the actual and potential role of school library media programs in library networks, to find out how participation by schools affected their ability to meet the information needs of their own clientele and how it affected the services of other libraries participating in networks.

The final report of the Task Force was accepted by the NCLIS in September 1978 and is now readily available through the US Government Printing Office. (The full text was also published in the Winter 1979 issue of *School Media Quarterly*.)

The purpose of this article is to examine and review the Task Force Report and consider possible implications and parallels that may be drawn in the context of Australian library and information services.

* Australian Library Journal, 29:2 (1980) p.73-78.

ACCESS POINTS TO INFORMATION RESOURCES

In establishing a rationale for the inclusion of school library media programs in the national network, the Task Force Report notes that 23 percent of the total US population (or just under 50 million people) is enrolled in public and private elementary and secondary schools. If the ideal of satisfying every individual's total information needs, as expressed in the NCLIS publication *Toward a National Program for Library and Information Services: Goals for Action*, is to be achieved, then it is argued that those involved in education - students, parents and teachers - should find their school library media centres to be 'effective points of access to the appropriate parts of that total information resource'. According to the Report this will happen only when schools are involved as full participating members in a 'library network'.

The Task Force defined a 'library network' as 'two or more libraries and/or other organisations engaged in a common pattern of information exchange through communications for some functional purpose'. A network usually consisted of 'formal arrangements whereby materials, information and services provided by a variety of types of libraries and/or other organisations are made available to all potential users'. Though libraries might be in different legal and political jurisdictions they would agree to service one another on the same basis as each services its own constituents.

It was noted that computers and telecommunications may be among 'the tools used for facilitating communications among them'. In the Australian context such 'full service' networks do not yet really exist, though cataloguing networks

such as CLANN, TECHNILIB, and CAVAL would appear to have long term objectives not inconsistent with such a definition.

CO-OPERATIVE ACTIVITIES

The fact that schools have been involved in co-operative library activities under informal arrangements is given in the Task Force Report as evidence that barriers to more formalised arrangements can be overcome and, in fact, need to be overcome if the successes of informal arrangements are not to be jeopardised. As the Report points out, changes in personnel may signal the end of voluntary co-operative efforts. Without an adequate mechanism for sharing resources regionally and statewide, such co-operative arrangements will be restricted to the local level only. Australian librarians involved in local co-operative ventures such as school and public librarians, would no doubt support such a view on the basis of their own experiences. Though personal and professional friendships may provide a firm basis for beginning co-operative ventures, institutions need to formalise their arrangements if the co-operative activities are to continue when the people initially involved move to other areas of work.

THE 'SPECIAL' NATURE OF SCHOOL LIBRARIES

While the Task Force recognised the 'dual mission' (ie teacher and librarian) and particular responsibilities of school library media specialists, the Report acknowledged that the 'special problems' faced by school librarians are in fact shared by many different types of librarians. In the Australian context, Schmidmaier[2] has drawn

attention to the fact that there are considerable parallels in the working environments of school and special librarians where emphasis should be on the storage and retrieval of information rather than on 'things bibliographical'.

WHY INCLUDE SCHOOL LIBRARIANS IN NETWORKS?

As part of the rationale for inclusion of school library media programs in library networks the writers of the Report observe that the information needs of students, teachers and others involved in education frequently go beyond the resources of even the very best school library media program. While schools need to provide quick and efficient access for their users to the materials and services of other libraries, they are 'collectively rich in specialised resources' that may have value for users of public, academic and special libraries. Thus, it was concluded: 'Full participation by schools in library networks would provide ready access to a wider range of resources and would enable other libraries to take advantage of the school's specialised materials and services to the benefit of millions of others'.

CONTRIBUTION OF SCHOOL PROGRAMS TO NETWORKS

In discussing the resources that school library media programs could contribute to the national network, the Task Force found it useful to look at three main groups - materials, services and human resources.

In the area of *materials* it was found that specialised materials such as audiovisual resources, ethnic and career education collections could be of use to a wider range of library users.

School library media program *services* which could contribute to the national library network included ordering, processing and cataloguing services, repair services, facilities for computer assisted instruction, materials examination centres, local production of materials, instructional equipment, computer terminals, delivery systems and consultancy services.

In the area of *human resources*, school programs had much to offer in the way of teachers' subject knowledge supplemented by their practical experience, travel and non-teaching jobs related to their speciality. Within Australia some public librarians have expressed a desire for assistance from school colleagues in the area of developing audiovisual resources and services.[3] If such knowledgeable professionals' were to be excluded or discouraged from participation in networking, the Task Force members feel that they may be 'overlooked as important resources present in every community'.

With regard to the contribution Australian school librarians could make to a national library network it is fair to say that though many of the specialised materials referred to in the Report have been collected, some of the services listed are in the very early stages of operation. But then the same could be said of the current state of developments with Australia's 'national library network'. So perhaps now is the time to be looking at the potential components of such a network so that future planning does not omit some parts of Australia's total information resources.

BENEFITS TO SCHOOL PROGRAMS

The Task Force claimed that there would be benefits to students, teachers, administrators, parents, medical and educational specialists, school library media specialists and the general public if school library media programs became full participating members in a national network of library and information services:

. Students would have educational or personal information needs which are just outside the curriculum orientation of the school's collection and would benefit from a network including academic, special and public libraries.

. Students would have access to human resources in the form of persons with extensive knowledge and experience in specific areas, as well as gaining access to specialised materials, such as the collections of college and university libraries for advanced learners.

. Teachers would benefit from access to a wider range of professional literature and computerised data bases such as ERIC.

. School specialists such as counsellors, psychologists, and therapists would have access to specialised resources not found in school library media centres.

Thus the groups of people who make up the school community would benefit from pooling of resources, access to information and the bringing together of human resources made possible by a school's active participation in a library network.

Echoing the findings of studies relating teachers' information needs to sources of information used, the Task Force Report summarises the benefits of school participation in library networking the following way: 'Information that is within reach is information that will be used ... Making information accessible increases the likelihood that it will be used effectively'.

Making the school library media program an access point to a nation's total information resources, then, provides that accessibility 'within reach'.

GUIDING PRINCIPLES OF NETWORKING

As the Task Force members studied factors that inhibited co-operation, they became aware of certain guiding principles. These principles are worth quoting in full for the firm basis they provide in establishing almost universal guidelines for developing library networks.

1. Each individual has a right to equal opportunity of access of information that meets his/her needs.

2. Networks must be built on strong individual library collections. Each participating library must have the capability of serving the ordinary needs of its users and of contributing to the network as well as receiving services.

3. Networking is not free. Besides specific equipment and materials costs, staff time will be needed to plan the network, to carry out its vital operations, and to provide the shared services.

4. All participating libraries must be equitably represented on the governing board of the network.

5. Effective communication among members is essential. A good modern communication system should link all member libraries, and individual librarians must feel at ease in contacting and working with their counterparts in other libraries.

Thus the Task Force recognised that library *networking does not replace the need for adequate individual collections.* Providing access to a wider range of resources for library users involves staff time, energy and personal commitment. It also demands that librarians be able and willing to work in group situations and communicate effectively and efficiently.

BARRIERS TO NETWORKING

The factors that inhibit co-operation and participation were then grouped by the Task Force into five main areas: psychological factors (including attitudes), political and legal factors, funding factors, communication factors and planning factors.

PSYCHOLOGICAL BARRIERS

According to studies cited in the Report, the major obstacles to successful networking seem to lie with psychological factors and the attitude of librarians who lack a willingness to modify policies and communicate and plan with other librarians.

The Report lists a number of fears which it claims cannot be substantiated on the evidence available. For example, some public, academic and special librarians persist with the feeling that requests from schools would place unreasonable demands on their resources despite the fact that studies in this area do not give credence to such fears. In Australia there is a growing number of local area librarians' groups composed of public, school and some special and tertiary librarians, which have been developing union lists of local holdings and special materials such as periodicals. The ready availability of such lists and inter-library loan facilities has not been found to place intolerable strains on participating libraries. More comprehensive library services have been provided with librarians seeking to borrow from the closest or most accessible library holding the wanted items. In many cases this has been a smaller member of the group rather than a larger one.

The burden of inter-library lending has been found to be more equitable than before as the location of items becomes known and the larger libraries are not approached unnecessarily.

POLITICAL AND LEGAL FACTORS

Political and legal factors which inhibit school library media program participation in networking quoted by the Task Force relate to some US state laws which exclude schools from participation in networking and to the problems of different authorities having responsibilities for different types of libraries.

The situation is just as complex in Australia. State Audit Acts have complicated the progress of a number of Schools Commission and Curriculum Development Centre programs aimed at improving the availability of curriculum support services and resources to school communities. There are also considerable variations between states in the decision-making responsibilities exercised by regional offices of education.

FUNDING DIFFICULTIES

As stated in the third guiding principle for establishing successful networks, networking is not free. While each school library media centre needs its normal financial sources to provide basic resources for daily needs of users, additional funds are required to finance the costs of network operations and services. The Report states that such funds are not easy to secure in the US at present, as is no doubt the case in most countries.

COMMUNICATION PROBLEMS

In the communications area the Task Force states: 'Knowledge of other libraries' resources, rapid transmission of information requests, and prompt delivery of materials are of particular importance to users of school media programs, for whom a week's delay can render the material useless'.

However, some school centres which are 'still without a telephone' may face problems meeting the needs of full participation in networking. Such an admission may give some consolation to those Australian school librarians who, in an age of satellites and interactive computers, have to cope with similar barriers in their communication links with other libraries and librarians.

PLANNING FACTORS

Paucity of information concerning school library media programs and networking, and lack of consultants experienced in this area are seen as factors which inhibit the participation of school programs in library networks.

The report suggests that provision should be made for phasing in libraries wishing to participate in networks so that deficiencies identified in areas such as services, collections and staff can be remedied within an agreed time-frame. Full participation in the network would be conditional on compliance with minimum standards. In Australia this situation is further exacerbated by the inexperience of most groups of librarians in networking.

TASK FORCE RECOMMENDATIONS

Forty-seven recommendations are listed in the Report, grouped into the five problem areas listed above. As each factor inhibiting school library program participation in networking is discussed a set of recommendations is presented, divided into two categories - 'immediate recommendations' which could be implemented within two years, and 'intermediate recommendations' which could be implemented within five to 10 years. Each recommendation is followed by the name of the agency which the Task Force feels should implement it. This procedure has certainly given many organisations such as the American Association of School Librarians, local and state education agencies, NCLIS, and the Association for Educational Communications and Technology very full action programs for the next five to 10 years.

The recommendations are designed to overcome the problems which currently inhibit school library media programs participation in networking. They are well developed, thoughtful and ambitious in nature and scope. While specific recommendations are difficult to appreciate fully outside the context of the Report itself those in the communications area are of a particular relevance to the Australian situation at this time.

The Task Force made the following recommendations which could be accomplished in two years. The suggested action agencies are listed at the end of each recommendation:

1. Provide a system for exchange of resources and information and provide the necessary communication links for contacting other network members (School library media supervisors through Local Education Agencies (LEA's) and State Education Agencies (SEA's)).

2. Commission studies that demonstrate the relationship of technology to library networking and that identify the technology needed to enable effective participation of school library media programs (NCLIS in co-operation with American Association of School Librarians (AASL) and other national associations).

3. Encourage the development of data bases that identify the resources of an area, state or region and that meet the needs of users of school library media programs (LEA's with assistance from SEA's).

4. Develop local union lists of appropriate resources

(eg periodicals, films, special collections) (LEA's with assistance from SEA's).

The effective implementation of the first, third and fourth of these recommendations is difficult to envisage without the development of machine-readable data bases for individual school and/or regional resource holdings. Perhaps the studies commissioned in Recommendation 2 will examine ways of using available technology to foster such developments.

The Report concludes that the organisations and agencies identified in the recommendations must accept the challenges offered willingly. Any delays would make entry to or establishment of a network more difficult.

AUSTRALIAN SCHOOL LIBRARY PROGRAMS AND NETWORK DEVELOPMENTS

There are developments on the Australian school library and educational scene which have implications for involvement of school library programs in networking. While the cataloguing requirements of school library users may be different from those of, say, academic and research libraries, the need for flexible machine-readable files to ensure responsive information retrieval in the school environment, and the sharing of resources and information in the wider community is just as great.

Current Australian attempts to harness computer and communications technology to the needs of school library users do not appear to place a high priority on the development of machine-readable data bases for individual school resource holdings. At present, SAERIS (South Australian Education Resources Information System) developed

by the South Australian Department of Education provides microfiche master catalogues (main entry and authority files) from that States' School Libraries Branch to South Australian Government schools. School librarians may then copy catalogue from the fiche or order cards by quoting the unique record number.

The SAERIS system has been used as the basis for the development of a national pilot project, ASCIS (Australian School Catalogue Information Service) aimed at the exchange of bibliographic data across school systems. The purpose of the ASCIS project, which has been extended to end in May 1980, is to test the feasibility of introducing a computer-based catalogue card service for all Australian schools.[4]

While systems such as SAERIS and ASCIS do have the potential to release school librarians from cataloguing tasks and provide a cataloguing information data bank between States, at present they fall short of providing the community with a flexible basis for network participation or resource sharing. They are essentially computer-assisted card reproduction services which were not designed for the inclusion of location information - though features of the card request system could be enhanced to indicate users who had requested card sets for particular items.

Thus it may be said that there is some evidence to support charges that school librarians are overly concerned with aspects of bibliographic control rather than information retrieval. The valuable ASCIS and SAERIS files could be adapted and utilised in a variety of ways to more adequately meet the current and future needs of library and information services from different environments.

Such views are not incompatible with those who believe that school libraries should be active participants in library networks. The one long range recommendation of the Task Force Report is that '... library networks in which school library media programs are full participating members be established and operating in every region, state and area of the nation.'

This does not deny that there may be different types or levels of networks which make up the total national library network. It seeks to establish that students, their parents, teachers and others involved in their education should find their school library to be an effective point of access to the appropriate parts of (the) total information resource. It should ensure the quality of information services available to the school community. As the Task Force Report comments: 'The quality of the information services to which students and their teachers have access affects directly what they learn and how well they learn it - a factor of no little consequence for this Nation's future'.

In listing guiding principles and recommendations for school program participation in networking, the Task Force has not sought to oversimplify the difficulties inherent in such a policy. Contributions to the national network that could be made by school programs and the benefits to users have been clearly identified, as have barriers to such co-operation.

The current embryonic state of network developments in Australia would suggest that all librarians and library administrators would benefit greatly from reading the contents of the full policy statement and contemplating possible implications in their own environments.

CURRICULUM INFORMATION SERVICES

In related educational areas, there have been a number of developments at both state and national levels recently aimed at meeting the needs of teachers, curriculum developers and educational administrators for access to relevant and useful curriculum materials and information. At the national level, the Curriculum Development Centre's Curriculum Information Service is developing a machine-readable data base of educational resources from a variety of sources including state departments of education, tertiary institutions involved in teacher education, local teacher and education centres, conference papers, reports, etc. There have been preparatory discussions to ensure that the CIS data base and that of the Australian Education Index (AEI), now available through AUSINET, will be complementary and capable of machine interfacing.

Several state departments of education are looking towards developing curriculum information systems which will specialise in the collection and dissemination of regional and local materials and be able to utilise CIS, AEI and other major data bases such as ERIC.

DIFFERENT TYPES AND LEVELS OF NETWORKS

One Australian librarian has expressed the view that this country's information system should not be 'cluttered up with meeting the routine requirements of public libraries and school libraries' conjuring up visions of 'primary school children trundling into the National Library to do their assignments'.[5]

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NETWORKING: AN EFFECTIVE RESPONSE TO CHANGE*

Marianne Broadbent

I would like to begin this seminar on Resource Networking with a story, a medium familiar to many of us. It is a story which raises quite a number of issues - issues of considerable importance to the topics of resource sharing and networking.

"There was once a treeful of squirrels who each scurried around gathering whatever nuts could be collected. It was a fairly haphazard affair: some industrious squirrels did quite well; others relied on a small store of well-chewed nuts; some nuts even languished on larder shelves gathering dust because all the squirrels had forgotten they were there.

One day a progressive Director-General of Squirrels decreed that resourceful squirrels should do better. So he appointed a Supervisor of Nuts to teach the squirrels how to acquire, organise and distribute nuts more efficiently and effectively. The S. of N. took as his motto: The RIGHT nut to the RIGHT squirrel at the RIGHT time. All the squirrels were required to surrender their individual supplies to the central Nuttery. This caused some wailing and gnashing of teeth but it was soon found that a central Nutlist helped everyone to use the existing supply of nuts more effectively.

Many other trees followed this example and set up attractive and efficient nutteries and the University even set up post-graduate courses for Nutters. The D-G allocated

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bigger and better grants for the purchase of more nuts though sadly the price of nuts was rising rather faster than the growth of the grants.

At about this time some clever squirrels in a distant forest discovered that some squirrels did not like nuts at all, while others could benefit from a diet which included other foodstuffs as well as nuts. There were even some doom-sayers who claimed that the era of nuts was past. So the Supervisor of Nuts wrote a manual on the Management and Organisation of non-Nuts and developed the concept of the Multi-food Resource Centre or M.R.C. Despite all this, most trees still stuck to the old style of Nuttery.

In due course, the Chief Nutter of the forest and the Supervisor of Nuts became concerned that some trees had rather more nuts than they used while others had scarcely any, and that, in any case, no tree could any longer afford to gather all the nuts they needed. It was decided, not without further wailing and teeth-gnashing by some squirrels and especially some nutters, that a forest-wide system of nut-buying, nutlisting and nut-sharing would be set up. This system was generally called a Nutwork.

After a slow beginning, nutworking started to show its advantages. Each tree was linked to all others by means of a Grape-vine. If a squirrel wanted a particular nut, he first checked with his nutter in his own nuttery. If the request did not show up in the local Nutlist, a check was made on the Union Nutlist and an Inter-Nuttery Loan was initiated on the Grape-vine. Some nuts no longer needed in a particular tree were transferred to where they were in current demand. Pool Collections of nuts (and non-nuts) were established in major centres of the forest. A squirrel

from one tree had nuttery privileges in every other tree.

More and more the role of the nutters became that of information specialists or nut-brokers. They were in constant touch with those who planned the squirrel diet (or Squirriculum) and were skilled in marshalling resources to meet needs. And so it was that the profession of nutterianship reached its maturity. And the squirrels all rejoiced in their new creed: From each according to his means : to each according to his nuts. And from every tree-nuttery every nutter proclaimed with the fervent conviction of his vocation: Nuts to you!"[1]

That story about squirrels, nuts, nutteries and nutworking raises in my mind several questions which are fundamental to any discussion of resource sharing and networking:

- What is the cause of the recent interest in resource sharing programs and networking?
- What type of cooperation is desirable and feasible in the education environment?
- Who should be involved? For what purpose?
- Who should be making decisions about networking
  - the squirrels
  - the nutters
  - the Supervisor of Nuts
  - squirriculum developers?
- Should all decisions be made at the top and passed down?
- Are cooperation, resource sharing and networking different

names for the same activity?

Some of these questions I hope to answer in this address Others are not so easily dealt with. Hopefully you will spend the next three days exploring these questions, examining some possible solutions and then deciding on the implications for your school, your services and your community.

WHY COOPERATE?

The recently released second edition of *Books and Beyond*[2] has one new chapter. Chapter nine, with the title "Resource Networks", focuses on the need for cooperation in the purchase and sharing of resources, sharing information and sharing services. It is worth pondering for a moment to ask why there is such interest in forms of cooperation between libraries and librarians particularly in the education environment. I think that there are a number of reasons which, when taken together, answer the question "why cooperate?"

1. CURRICULUM NEEDS ARE DIVERSE AND CHANGING

The way in which Australian schools operate has changed considerably over the last ten years. In most states syllabuses and curriculum statements have changed in nature and scope for prescriptive and content-oriented documents to process-oriented guidelines with the possibility of many locally developed options and strategies. There is now considerable diversity within schools and between schools. The implementation of policies aimed towards school based curriculum development has important implications for school level resource services. One school library cannot be expected to meet all of the diverse and continually changing resource needs of all of its students and teachers.

2. TEACHING STRATEGIES AND LEARNING STYLES HAVE CHANGED

Developments in educational theory, research and practice now place greater emphasis on the importance of "learning to learn", individual differences and styles of learning, and recognising students as active participants in the learning process. Consequently, schools today are - or should be - characterised by diversity in teaching and learning strategies and organisational patterns. Such diversity requires access to a wider range of resources both qualitatively and quantitatively. Again, the resources of one school or one institution cannot and should not cater for every contingency.

3. "...THEY MAKE SENSE"

These are the words of an Assistant Regional Director of Education in New South Wales speaking about his region's approach to resource sharing. Addressing a seminar for school librarians and educational administrators, Frank Meaney from Liverpool Region made the following statements:

> "...we feel that the expansion of libraries on traditional lines cannot go on. When you build schools close together - whether they are secondary or primary - people need to get together and talk about their library stock.
>
> ...In the sourthern part of our region the primary schools are getting together because they are smaller and are in a small area. The best way to begin is to try to stop the duplication of resources in a small area rather than the whole region. We are encouraging this through Inspectors and Principals so that the librarians can ensure that the shelves of these newer schools are not going to be stocked with books that ... have episodic use. Rather, we would like them to rotate within a small geographic area and wear out

rather than become out of date.

...I am convinced we can create a climate whereby resources sharing policies can be implemented because when they're examined clearly, they make sense."[3]

4. RESOURCES OUTSIDE THE SCHOOL - CONTACT POINT NEEDED

If changing educational patterns require access to a wider range of material resources than one school can reasonably be expected to provide on site, who is acting as a contact point for those resources outside your school? As you are aware of the resources available in your immediate community and in nearby institutions or service agencies? What mechanisms have been developed between, say, your school and neighbouring schools to determine what kind of resources may be useful to each other, or can be shared or acquired cooperatively.

In some schools a number of teachers with different interests or specialisations may have developed good local contacts with other schools or community members. Are you aware of who they are and what they are doing? Are your fellow teachers even aware that you see this type of contact - acting as an information agent or contact point for resources outside the school - as part of your role in the school? If you are not doing this type of work, who is?

I would suggest that in most cases if the school librarian does not take some initiative and responsibility here then there must be many resource and information needs within schools which are not met.

5. MUTUAL SUPPORT

It is my belief that the mutual support librarians gain from working together is a very important by-product of cooperative

activities.

In preparing for a recent seminar and publication on resource sharing I gathered together information about more than 80 resource coordination and school librarians' groups currently operating in New South Wales.[4] In listing the nature of their activities, coordinators for these groups strongly emphasised the value of the contacts made between and amongst librarians, and the professional support gained from meeting and working with others in similar situations.

Many School librarians suffer from professional isolation as they tend to be the "one and only" on their school staffs. In the absence of considerable professional contact and stimulation, people can stagnate, simply continuing to do what they have been doing for years without realising that there may be other solutions, other ways of doing things.

School librarians also generally lack any form of "apprenticeship" as initial appointments tend to place newly graduated school librarians in charge of resource centres. Unlike other teachers, school librarians do not usually have the advantage of working as an "assistant" to a "senior" or "master" librarian. Thus, cooperative activities may provide both moral support and reassurance as well as professional stimulation.

6. COORDINATION NEEDED AT ALL LEVELS

There is still much work to be done to ensure available resources are used to best advantage in meeting the information needs of teachers and students. The project I have been working on for the NSW Department of Education, the Curriculum Information Project, was initiated because it was felt that there was a need to provide teachers, curriculum consultants and educational administrators with access to a wider range of curriculum support materials.

In 1979 the Curriculum Division undertook an internal study of the distribution and accessibility of a range of curriculum support materials. The study reported that at present useful and relevant support materials tend to be collected by a variety of persons at many levels in the education environment. Although there may be established channels of communication between and among some groups, there was little evidence of coordination concerning the availability of many items collected.[5]

What efforts has the library profession made at school, district, regional and statewide levels to meet the barely recognised information needs of teachers, educational administrators and curriculum consultants? I would suggest that this area is very much underdeveloped at present. The coordination we speak of for resources for students within schools is just as important for resources necessary to meet the needs of teachers, administrators and consultants. Perhaps if this was seen as a priority, school librarians would not be perceived so often as peripheral to the curriculum development process.

If there are such sound educational reasons for cooperation between libraries and librarians, should schools be forced to cooperate, share resources and participate in network development?

In Glen Pullen's story about squirrels and nutworks it was decreed that squirrels would become involved in nutworks. Such a "top down" approach does not always have the desired effect. In NSW there is no policy on how schools should or might work together. But for some time people have been doing just that in a whole variety of ways. School librarians in NSW have been particularly active in initiating and maintaining local area groups which include librarians from

different types of schools, institutions, municipal and special libraries, as well as regional administrators.

TYPES OF COOPERATION

Some recent examples of activities undertaken by these groups in New South Wales include Union lists of periodicals, videotapes and audiovisual materials. A significant number of these have now been produced in KWOC (Key-word-out-of-context) format which is a very simple and cheap form of automated indexing.

- Equipment coordination lists between a group of schools to ensure compatibility and to reduce unnecessary duplication of resources.

- "Round Robins" where a group of four or five librarians buys, say, $100 each of paperback fiction, or community language materials. These may then be swapped around between schools to overcome "reading out" of certain types of material.

- Schools Commission Library Resource Sharing Grants. During 1978 and 1979 the Schools Commission's NSW Planning and Finance Committee invited non-government schools to submit applications for assistance in developing cooperative resource-sharing projects with one or more of other non-government schools and public libraries. The impetus for this type of grant came from an application in late 1977 from Marist Brothers' North Shore High School for a video resource sharing group in the North Shore area.

- Liverpool Region Resource Coordination Centre. A group of secondary schools in the Liverpool region had been working together for some time when they decided they needed to

formalise their informal activities and improve resource coordination. There is a whole range of activities they would like to take on but do not have the time to initiate and maintain these in addition to their day to day responsibilities. They prepared a simple but persuasive submission to the regional office and, as a result, now have a 2 day a week liaison officer.

- Western Region Resource Directory. School librarians in the Western Region have worked with consultants to develop a directory of human, material and environmental resources. The aim of the Directory is to enhance the quality of educational programs and initiatives through
  - . effective utilisation and development of resources
  - . providing a framework in which resources can be promoted, utilised and evaluated, and
  - . encouraging communication and cooperation between pupils, teachers, schools and communities.

- NICS and TALICO. The Northern Inter-library Cooperation Scheme (NICS) and Tamworth Library Cooperation (TALICO) are multi-type groups of libraries, including school libraries whose cooperative efforts have been formalised over the last few years. Both are in non-metropolitan areas, with NICS being based at Lismore and TALICO at Tamworth.

I know that Victorian school librarians are also engaged in a range of activities which may include similar ones to those outlined above. While you may not have perceived a great deal of activity in NSW at the State level there is considerable innovation in the library and information services area within schools, between and amongst schools, local groups and regions.

After making an inventory of these activities aimed at improving resource services to teachers and students, several factors emerge:

OFFICIAL SUPPORT

Most local groups have found that they reach a stage where they require official support for approval to meet and maintain their activities. They also need to involve administrators and teachers closely to ensure that they are working towards what their clientele perceives as the development of relevant and necessary services. The most often stated solution to overcoming difficulties faced by local area groups in NSW has been to inform, involve and provide feedback to school executive, district inspectors and regional authorities.[6]

In Queensland, the formalising of informal cooperative systems between schools was initiated by Regional Directors of Education in 1976. The development of these cooperative groups continues to be encouraged at the Regional level and they have been extended to include non-government schools, public libraries, teachers' and education centres, and Colleges of Advanced Education. At the end of 1977 official endorsement and support for the operation of these groups was provided from the central Department of Education by Brian Banisch, Staff Inspector in charge of Resource Services:

"Mutual aid groups are seldom entirely self-sufficient. Support from Library and Resource Services and other section within Resource Services will therefore be made available to networks wherever possible."[7]

The Queensland approach combining local initiatives and decision making supported by regional and central agencies is perhaps the most useful and appropriate model of cooperation in the Australian education environment.

READINESS

In New South Wales, some librarians, some administrators and some local groups have reached a state of "readiness" for cooperative activities where they are taking the responsibility for substantive initiatives. They are not waiting for someone to take decisions on their behalf, but are actively shaping the future of library and information services in their own environment. They have been able to recognise the educational needs around them and have had the professional maturity to act. I feel that initiation and participation in such local decision-making is a most encouraging sign for the future of school librarianship.

LOCATION INFORMATION

Wherever librarians in local groups have been working together for some time, they seem to reach a stage where they cannot develop their initiatives any further unless they have a much clearer idea of one another's resources. They attempt to do this by compiling lists of their holdings in various areas, or they work together on union lists. Our major information retrieval device, the card catalog, does not lend itself readily to these activities. This facet of the development of cooperative library groups prompts some further questions:

- What emphasis has been placed on information concerning location in the school cataloguing systems currently being developed?

- To what extent are systems like SAERIS and ASCIS designed to cater for the current and future needs of school information services?

- Are current and developing systems with their perpetuation of the card catalog appropriate to the school environment?

Or should we be looking at different types of information retrieval tools?

. Are we taking a piecemeal approach to the future by attempting to solve cataloguing problems by a central card service without fully evaluating the nature and scope of future information organisation and retrieval needs for students, teachers and librarians at a number of different levels?

It is important to remember that school libraries draw on two professions - education and librarianship. Some of the problems posed in the questions listed above have been faced by those in the library and information field. School librarians are but one group trying to grapple with limited resources and an increasingly demanding clientele. If you look at the activities and literature of special libraries and librarianship there would be much that would be familiar to you. Librarians in special libraries have been in the forefront of the development of information retrieval systems and mechanisms for meeting a whole range of information needs which are not dissimilar in nature and scope to those of school librarianship.

NETWORKS

In the library and information environment one major development in recent years has been the library network. The word "network" is often used rather loosely and so I would like to clarify what I mean by a library network:

A library network is an association of libraries to achieve specific goals and objectives, through formal arrangements directed at gaining achievement of network goals and objectives, without diminishing the independence and autonomy of the component units and

and their pursuit of other goals.

This definition of a "library network" implies a number of features and characteristics. These include -

- a contractual agreement
- defined goals and objectives
- separate funding
- a management structure
- independence
- an active educational and marketing policy

For some time now many of us have worked in informal groups and made considerable personal commitments. However, many of these informal arrangements do not last when the people involved move on. It is also tempting for financial allocations for "outside" or cooperative activities to be cut at time of budget pruning. So there needs to be a legal contract with specified obligations.

A network needs to have a governing body, be able to employ staff and be independant of its institutional members. Participation in a library network may also lead to changes in the nature of the work done by library employees. The network has to develop an active educational and marketing policy to assist its members and to attract new members. The basic asset of a library network is usually a machine-readable data base. Different products and services are generated from the data base according to network members priorities and the policies developed by the network's governing body.

The working definition of a library network I have used implies more formal and substantial arrangements than informal resource sharing usually involves. If may be useful to quote the guiding principles for developing library networks taken from the NCLIS Task Force Report on the Role of School Library Media Programs in Networking:

"1. Each individual has a right to equal opportunity of access of information that meets his/her needs.

2. Networks must be built on strong individual library collections. Each participating library must have the capability of serving the ordinary needs of its users and of contributing to the network as well as receiving services.

3. Networking is not free. Besides specific equipment and materials costs, staff time will be needed to plan the network, to carry out its vital operations and to provide the shared services.

4. All participating libraries must be equitably represented on the governing board of the network.

5. Effective communication among members is essential. A good modern communication system should link all member libraries and individual librarians must feel at ease in contacting and working with their counterparts in other libraries."[8]

Perhaps the most important features to note here are that networking is not free and does not replace inadequate individual collections. The development of library networks should not be seen as an easy and simple panacea. However, such networks may provide a way of coping with the current and future demands made on library and information services.

FEATURES OF A WELL-DEVELOPED NETWORK

I would like to conclude by listing some features of a well developed network in the education environment. Such a

network would:

- meet current and anticipated future needs for information recording and retrieval within and between school and other information agencies.

- provide users with suitable information retrieval tools.

- eliminate or minimise duplication of effort.

- encourage and stimulate best use of limited resources.

- bring people together to plan for future resource services.

Technology should be used to improve services, not just do more of the same or simply automate accepted manual procedures. The linking of computer and communications technology with the development of library networks should be used as a stimulus for a more effective response to the needs of students and teachers. The way in which you plan, nurture and sustain that response depends very much on your role in the school, your concept of library services and the way in which you work with other people.

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COMPUTER APPLICATIONS FOR SCHOOL LIBRARIES: SOME CONSIDERATIONS*

by

Robert Broadbent

RATIONALE FOR LIBRARY AND INFORMATION SERVICES IN SCHOOLS

The attitude which I adopt to library and information services in schools is from the viewpoint of a user of these services. My approach is unashamedly user-biased. As a user in a school what I require of the library service is an effective and efficient system which is simple to use and which provides convenient access to all my information needs.

In an attempt to satisfy such user information needs school librarians provide a resource service to schools in which they collect, organise and index school resources (materials and information). In this context, it is important to recognise that the process of cataloguing is not an end in itself - materials are organised and indexed as a service to the school community. It should be axiomatic that the library service should take the shape and form that suits the users and the needs of the school curriculum.

That shape or form may not necessarily be the same as that to which librarians have been accustomed or that with which they feel most comfortable. However, it is critical to recognise this requirement lest there be too many more examples of the types of school libraries encountered in studies by Johnson and Balson on resource provision in Australian schools:

* Summary of paper presented at the Metropolitan West Region secondary librarians' inservice course "Today's Literature and Tomorrow's Technology", 23 April 1980.

"Often the studies revealed a well-organised library resource centre operating in glorious isolation, unaware or disinterested in the total learning resources pattern of the school."[1]

"Time and time again schools which have received Commonwealth library funds to establish effective resource services have been observed to fail in this endeavour. The new resource service fails to make an impact on the teaching-learning program because the service is based on assumptions which are inconsistent with those held by the teaching and administration staff."[2]

In summary, an effective school library service is one which is relevant to user needs and responsive to its environment.

COMPUTER APPLICATIONS IN SCHOOL LIBRARIES

It is in this context that the possible uses of computers in school libraries should be clearly recognised so that school librarians do not succumb to the temptation of searching for ways to use this new technology simply because it is available and of falling prey to the "everybody's doing it" syndrome.

There are a number of legitimate reasons (and quite compelling reasons, in my view) why school librarians should be exploring possible applications of computers and modern communication technology. Some of these are:

(1) they offer a way of providing a better service

(2) library services are highly labour intensive - at least some of these tasks can be handled by

computers, enabling more emphasis on reader services.

(3) manual systems, especially in the technical services area (cataloguing and classification), involve great repetition of tasks between schools, e.g. cataloguing items which have been catalogued already by other libraries.

(4) it is very expensive to maintain a manual system, particularly in view of the mammoth duplication of effort.

(5) lack of satisfaction with the adequacy and quality of the product of a manual system.

Already in Australia there have been developments in computer applications which tackle some of these areas. In recent years some large scale projects - one on a State level, the other operating nationally - as well as individual school level attempts have offered computer-based alternatives to current practices. A number of these are examined briefly in the comments which follow.

A.S.B.I.C.

ASBIC, the Australian School Bibliographic Information Centre, is of historical importance only now. Its establishment was proposed in a study commissioned by the Schools Commission in 1974. The report of this study on cataloguing needs for all Australian schools recommended the establishment of ASBIC to:

(1) act as a computer-based automated national centre for a centralized catalogue card service to all schools

(2) develop a data bank of information for the use of any schools cataloguing service

(3) enable all schools to be supplied with catalogue data

(4) provide catalogue card sets, book labels, pockets and cards

(5) offer an individual on-demand service to all schools in Australia.

This recommendation was not acted upon. However, it is important to note that the study was limited by the Schools Commission to an investigation of card services, i.e. *there was implicit acceptance that the card catalogue is the most effective instrument for maintaining bibliographic control in Australian schools.* This assumption underlies other large-scale developments, too. *It is an assumption which should not be accepted without serious questioning.*

S.A.E.R.I.S.

The South Australian Education Resources Information System is a computer-based central cataloguing service operated by School Libraries Branch of the Department of Education in South Australia.

At present, SAERIS provides master catalogues (main entry, and subject, series and publisher authority files) in microfiche format to all government schools in South Australia. All schools have been issued with a desk-top microfiche reader. School librarians (or clerical assistants, volunteers, etc. in small rural schools) may then copy catalogue from the fiche or order card sets by quoting the unique record number attached to each item.

In order to establish the computerised bibliographic data base for SAERIS all cataloguing records of centrally processed materials were converted to machine-readable (limited MARC) format. This process was commenced in April, 1976 using 10th abridged Dewey, modified Sears subject headings and ISBD punctuation. All central cataloguing is now handled in this manner.

The long term objective for SAERIS is an on-line bibliographic, cataloguing and information retrieval system for the S.A. Department of Education for book and non-book items. Achievement of this objective seems likely to be in the very distant future. In the short-term SAERIS hopes to accomplish -

(1) centralised catalogue processing - create and maintain master file and authority files

(2) catalogue production on microfiche

(3) catalogue card service

(4) production of loan card labels and spine labels

(5) current awareness service (new releases bulletins).

To date, the first three of these services are available. Currently, the microfiche catalogue files contain entries for 83,500 titles. Problems have plagued the introduction of the system and the card service did not come into effective operation until the beginning of the 1980 school year.

The advent of SAERIS now means that items are catalogued centrally and the bibliographic data is stored on computer. From this data the computer generates a master catalogue on microfiche; updates can be produced as required (either as supplements or cumulations). All entries are alphabetically arranged by main entry. Images on the fiche use upper and lower case letters and are identical with the standard S.A. school catalogue card (even including the hole!). With the option of copy cataloguing or ordering cards the only original cataloguing that now needs to be handled by a school librarian is for items not on the microfiche files.

A.S.C.I.S.

ASCIS (the Australian School Catalogue Information Service) is a national pilot project, funded by the Schools Commission, which throughout 1979 and until May, 1980 aims to:

(1) produce library catalogue files on microfiche for use by schools, school systems, State school libraries branches, and Education Centres;

(2) provide a catalogue card service to a limited number of government and non-government schools (all non-government schools in S.A. are eligible and 50 selected schools in Queensland; a special statewide approach for all schools in Tasmania).

ASCIS is based on microfiche and catalogue card output from SAERIS. The pilot project is national in scope and is aimed at the exchange of bibliographic data across school systems, e.g. ASCIS data base includes all titles catalogued by School Libraries Branches from Victoria and

Western Australia, as well as South Australia, and is planned to add all new acquisitions from other State and Territory Branches where the records are not already on file.

The purpose of ASCIS is to test the feasibility of introducing a computer-based catalogue card service for all Australian schools (shades of ASBIC?). Three approaches are being adopted concurrently:

Approach A: central school library authorities across Australia receive microfiche copies of the ASCIS data base at regular intervals. In return they input to ASCIS cataloguing information in MARC format for their new acquisitions not in the data bank. Fiche catalogue files are made available also to ten Education Centres to provide access for schools. (This is the only way in which NSW schools have participated in ASCIS.)

Approach B: non-government schools in S.A. and Queensland receive microfiche files. These schools may copy catalogue from the fiche or order catalogue cards (using the unique record number codes).

Approach C: this approach for Tasmania has been modified in view of recent Tasmanian developments. ASCIS files are provided to Tasmania on computer tapes rather than on microfiche. The tapes are run on the Tasmanian Education Department's own computer to produce catalogue cards requested by schools through on-line searching (for those schools with a direct link to the central computer) or via the Education Division of the State Library.

Technical problems have caused delays in the implementation of ASCIS (as with SAERIS) and necessitated extension of the project by 3 months in order to trial the card request phase. Early success rates for schools in searching microfiche files for required titles were quite low (less than 30% was very common) whilst the data base gradually grew from 23,500 titles to its present 83,500 entries over a 12 month period. The most recent figures in South Australia and Tasmania instance success rate of 70% and higher.

Comments by users of ASCIS microfiche available through the Northern Districts Education Centre (Sydney) indicate a marked lack of satisfaction with a service which realises a success rate of 50% or lower, and which is limited to copy cataloguing without a card request service back-up.

RESOURCE SHARING AND NETWORKS

ASCIS and SAERIS represent two major attempts to harness computer and communications technology to the needs of school library users. These systems maintain machine-readable bibliographic data bases but they are essentially computer-assisted card reproduction services.

Whilst they have the potential for releasing school librarians from cataloguing tasks and providing catalogue data banks between States, at present they fall short of providing a flexible basis for network participation or resource sharing. This is because they do not appear to place a high priority on the development of machine-readable data bases for individual school resource holdings. Currently, the systems do not allow for the inclusion of location information for individual items, i.e. which schools hold a particular title.

Adaptation of the valuable SAERIS and ASCIS files should be examined to enable their utilisation in a variety of ways for supporting the sharing of resources and information and network participation by schools and in the wider community.

ALTERNATIVE CATALOGUING AND INDEXING

Over the last two years a number of schools in N.S.W., mostly metropolitan secondary schools, have been developing KWOC indexes for their school collections as an alternative to traditional card catalogues or standard indexes. Such listings can be produced quickly and cheaply. They are currently being used as an alternative to the library card catalogue, for resource-sharing between schools and other libraries in union listings of resources (with locations), and as indexes to special collections, e.g. school video holdings.

As a final point: perhaps there is a lesson for school librarians in the findings of a 1979 study of catalogue use in South Australian schools.[3] The results of this study show that more than half of the secondary students involved use the card catalogue no more than once a month or not at all. Of those students who do consult the catalogue most use a subject approach; their use of bibliographic information was restricted mainly to subject, author, title and call number.

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GLOSSARY

AACOBS	Australian Advisory Council on Bibliographical Services
AACR	Anglo-American Cataloguing Rules
AARL	Australian Academic and Research Libraries
AASL	American Association of School Librarians
ABACUS	Association of Bibliographic Agencies of Britain, Australia, Canada and the United States
ABN	Australian Bibliographic Network
ACER	Australian Council for Educational Research
AEC	Australian Education Council
AECT	Association for Educational Communications and Technology
AEI	Australian Education Index
ALA	Australian Library Association
ALAA	Associate of the Librarian Association of Australia
ALBIS	Australian Library Based Information Service
ALCAE	Association of Librarians of Colleges of Advanced Education
ALJ	Australian Library Journal
ALPC	Australian Library Promotion Council
AMRS	Australian Machine Readable catalog record Service
ANB	Australian National Bibliography
ANB/MARC	Australian National Bibliography/Machine Readable Catalog
APAIS	Australian Public Affairs Information Service
ASBIC	Australian School Bibliographic Centre

ASCII	American Standard Code Information Interchange
ASCIS	Australian School Catalogue Information Service
ASLA	Australian School Library Association
ASLN	Australian Special Libraries News
AUSINET	AUStralian Information NETwork
AUSMARC	AUStralian Machine Readable Catalogue
AV	Audio-Visual
BALLOTS	Bibliographic Automation of Large Library Operations
BALLOTS/ SPIRES	Bibliographic Automation of Large Library Operations/Stanford Public Information Retrieval System
BAR CODES	Light pen readable numbers which allow for rapid user and item identification
BASIC	Beginners All purpose Symbolic Instruction Code
BATCH	A technique that is used where data to be processed are collected into one group prior to processing
BAUD RATE	A unit used to measure the speed of transmission in a telegraph or telephone channel
BIBDATA	BIBliographic DATA (National Scheme in Australia for shared cataloguing)
BIBNET	BIBliographic NETwork
BISA	Bibliographic Information on South-east Asia
BLAISE	British Library Automated Information Service
BNB	British National Bibliography

CAI	Computer Assisted Instruction
CAUL	Committee of Australian University Librarians
CAVAL	Co-operative Action by Victorian Academic Libraries
CDC	Curriculum Development Centre
CET	Council for Educational Technology
CIJE	Current Index to Journals in Education
CILES	Central Information, Library and Editorial Section
CIP	Cataloguing In Publication
CIPL	Committee of Inquiry into Public Libraries
CIRCUS	CIRculation Control, University of Sydney
CIRSYS	CIRculation SYStem
CIS	Curriculum Information Service
CISS	Community Information Sharing Service
CLANN	College Libraries Activities Network in New South Wales
COBOL	Common Business Oriented Language
COM	Computer Output Microform/Microfiche
COMSAT	COMmunications SATellite
COSATI	Committee On Scientific and Technical Information
CPU	Central Processing Unit
CRASH	Complete loss of central processor control. A microprocessor usually crashes when the wrong sequence of instructions is processed
CSIRO	Commonwealth Scientific Industrial and Research Organisation
CSIRONET	Commonwealth Scientific Industrial and Research Organisation/Network

DATA	Information which has been, or is to be processed by the computer
DDC	Dewey Decimal Classification
DEC	Digital Equipment Corporation
DIALOG	On-line retrieval system run by Lockheed
DISK PACK	A high speed mass storage device for program and data information. The information is stored on a rotating circular disk coated with magnetic recording tape. Data is written and read by fixed or movable heads positioned over the disk.
DOMSAT	DOMestic SATellite
EDP	Electronic Data Processing
ERIC	Educational Resources Information Center
EURONET	EUROpean NETwork
FID	Federation Internationale de la Documentation
FIELD	A subdivision of a record containing a unit of information e.g. an item record has some of the following fields: title, author, location, call number, etc.
FILE	An organised collection of records
FORTRAN	FORmula TRANslation
HARD COPY	Hard copy is printed copy from a printer
HARDWARE	Hardware is the physical equipment or devices that make up the computer complex - peripheral devices, central processor, storage devices, etc.
IASL	International Association of School Librarianship
IBBY	International Board on Books for Young people

IFLA	International Federation of Library Associations
ILL	Inter-Library Loan
INPUT	This is the data that is transferred from peripheral devices to the internal storage of the computer
INPUT DEVICES	Input devices are equipment used for transmitting the data to the central processing unit, e.g. light pen
ISBD	International Standard Bibliographic Description
ISBD(G)	International Standard Bibliographic Description/General
ISBD(M)	International Standard Bibliographic Description/for Monographs
ISBD(S)	International Standard Bibliographic Description/for Serials
ISBN	International Standard Book Number
ISORID	Information System on Research in Documentation
KWIC	Key Word in Context
KWOC	Key Word Out of Context
LA	Library Association
LAA	Library Association of Australia
LASC	Library Automation Steering Committee
LASH	List of Australian Subject Headings
LASIE	Library Automated Systems Information Exchange
LCMARC	Library of Congress/Machine Readable Catalog
LCSH	Library of Congress Subject Headings

LIGHT PEN	A highly sensitive photo-electric device which translates bar codes into digital signals, enters these directly into the central processor and displays them on a VDU if required
MARC	Machine Readable Catalog
MEDLARS	MEDical Literature Analysis and Retrieval System
MEDLINE	MEDlars on LINE
MEMORY	The area where instructions and data are stored and worked on by the central processor
MIDAS	Multimode International Data Acquisition Service
MODEM	Modem is a contraction of the words MOdulator and DEModulator. The modulator portion of the modem converts the serial keyboard signals into high and low frequency tones. These tones are transmitted over ordinary telephone lines in the same manner as voice signals are transmitted. At the other end of the telephone line a modem demodulator converts these variable tones into serial signals to communicate information to the waiting CPU.
NCLIS	National Commission on Libraries and Information Science
NELINET	New England Library Information NETwork
NICS	Northern Inter-library Co-operation Scheme (Northern NSW)
NLA	National Library of Australia
NNLF	Northern NSW Library Federation

OCLC	Ohio College Library Centre
OCR	Optical Character Recognition
OECD	Organisation for European Co-operation and Development
ON-LINE	Data processing in which all operations are performed by equipment directly under the control of a central processor
ORACLE	On-line Retrieval of Acquisitions, Cataloguing and Circulation details for Library Enquiries
ORBIT	On-line Retrieval of Bibliographical Information (Systems Development Corporation)
OSTI	Office for Scientific and Technical Information
OTC	Overseas Telecommunications Commission
OUTPUT	1. Results produced by a computer 2. To transfer information from a central processor to an output device
OUTPUT DEVICE	This is hardware that is the communication link between machine and man, e.g. a printer
PERIPHERAL EQUIPMENT	This refers to the input, output and secondary storage devices that are used with the central processor
PPBS	Planning Programming Budgeting System
PRINTER	An output device which converts data into printed form
PROGRAM	A program is a set of instructions
PRECIS	PREserved Context Indexing System
R & D	Research & Development

REAL TIME	It is an expression used to refer to any system in which the processing of data input to the system to obtain a result occurs virtually simultaneously with the event generating the data
RESPONSE TIME	The time between when an enquiry or instruction is given and the response is received
RLIN	Research Libraries Information Network
SAENET	South Australia Education NETwork
SAERIS	South Australian Education Resources Information System
SALASC	South Australian Library Automation Steering Committee
SALSSAH	Serials in Australian Libraries, Social Sciences and Humanities
SCI	Science Citation Index
SDC	Systems Development Corporation
SDI	Selective Dissemination of Information
SLAQ	School Library Association of Queensland
SLAV	School Library Association of Victoria
SMMART	Society for Mass Media and Resources Technology
SOFTWARE	All the programs and programming information which can be used on a CPU
SSAL	Scientific Serials in Australian Libraries
SSCI	Social Science Citation Index
STAIRS	STorage And Information Retrieval System
STISEC	Science and Technological Information Services Enquiry Committee
TACOL	Tasmanian Advisory Committee on Libraries
TASCIS	TAsmanian Schools Cataloguing Information Service

TEC	Tertiary Education Commission
TERMINAL	This is an input and/or output device that can be used for transmitting data
TIME SHARING	A user can buy time on a computer that is used as a service bureau
UBC	Universal Bibliographic Control
UCLS	University and College Libraries Section
UDC	Universal Decimal Classification
UNISIST	United Nations Information System in Science and Technology
VALA	Victorian Association for Library Automation
VCR	Video Cassette Recorder
VDU	Visual Display Unit
WLN	Washington Library Network
ZBB	Zero-Base Budgeting

COMPUTER TECHNOLOGY - IMPLICATIONS FOR SCHOOL LIBRARIANS

Dagmar Schmidmaier

We are today bombarded by media reports on the impact of technology on our society. I don't want to add to this volume of literature but would like to focus specifically on the impact of computer technology on the school library. In doing so the following aspects will be emphasised, determination of individual needs, the need to set goals/ objectives within a systems environment, the need to consider various levels of development, effective communication, educational requirements and the need for technical advice.

It is essential that as professionals we are capable of stating our needs to ensure satisfactory technological development. School librarians must have the knowledge and skills to be able to communicate with computer and telecommunication professionals - the role and function of computers in the school library is part of the responsibility of the teacher librarian. Planning for the future cannot be left to the technocrats and politicians.

THE SYSTEMS APPROACH

Change, particularly technological change is part of the fabric of society and in discussing the implications of computers for school libraries we are discussing ways of coping with change in a very special environment. C. West Churchman says that the systems approach is one way of dealing with change. "What is in the nature of systems is a continuing perception and deception, a continuing reviewing of the world, of the whole system and its

components. The essence of the systems approach, therefore is confusion as well as enlightenment. The two are inseparable aspects of human being." The systems approach is therefore a method of characterising the nature of systems so that the decision making process can take place in a logical coherent fashion. In today's environment there is increasing pressure on organisations to be accountable and school libraries should be concerned to provide appropriate and cost effective access to their resources. Therefore it is necessary to evaluate and reevaluate systems as a continuous, not a one off, process. The essential starting point in this process is the task of setting objectives and determining priorities. For too long school libraries have simply adopted systems developed for larger libraries - it is essential that teacher librarians determine the objectives and priorities for their own school library and those relating to proposed regional or state network developments and not simply adopt criteria established for other libraries in other environments.

THE COMPUTER

The computer has tremendous potential for libraries as it allows librarians to manipulate data and provide access points which were inconceivable with manual systems.

The basic components of a computer system comprise

INPUT devices
STORAGE devices
PROCESSING devices and
OUTPUT devices

Input devices include, punched cards, key to disk or tape systems, bar coding. Storage devices include magnetic tape

and magnetic disks and output devices include printers, visual display units etc. The processing devices comprise the 'heart' of the computer where all the calculations, sorting and filing takes place via electronic circuits. The film Basic Computer Terms provides a basic introduction to computer hardware. In addition you will be going on a tour of the computer centre - it is always important to see the physical objects and I'm sure you will then be able to concentrate on issues relating to their use in the school library, without being overconcerned about their technical characteristics.

The most significant development of the last 10 years has been the concatenation of computer and telecommunications technologies. In Australia today the switched telephone network is used for data communications - but there are problems as it is a system designed for voice communication and therefore has high error rates for data transmission and may cause network congestion with high volume use. The introduction by Telecom of a data communications network (designed specifically for digital communications) in the next few years should provide a better and more economic facility. Other technologies that could be utilized for data transmission are satellites and cable. The Government has called for tenders for a domestic satellite and initiated a cable enquiry. The difficulty for us as professionals working in the information field is how to become and remain conversant with the capabilities of these and other technological developments. For example in the school environment the microcomputer is a case in point, teachers and librarians need to be aware of the capabilities of the microcomputer, both in terms of hardware and software. Continuing education programmes are urgently required, plus some mechanism to provide communication between users, technical people and policy makers.

APPLICATIONS

Let us now turn briefly to consider a few systems using computer and telecommunications technology. Information storage and retrieval systems require the user to have access to a terminal and a telephone plus an account with the appropriate data base supplier. For example many libraries in Australia access Lockheed's DIALOG system in this way, that is by simply dialing up the Lockheed computer system in California and interrogating the relevant files. (The international call may go either via cable or satellite, the user has no control over this.) Within Australia users can have access to such data base systems as AUSINET, CSIRONET, Medline etc. The bibliographic systems are still largely batch operated systems, that is the user cannot dial up the computer via a terminal; systems in this category include SAERIS, CLANN, CAVAL. Some Australian bibliographic systems that have online capabilities are TASCIS, ORACLE and ABN, the new system being trialled by the National Library of Australia.

There are in addition a wide range of problems to be solved when discussing computer networks, that is the linking together of computer systems. Issues relating to technical aspects must be addressed by systems engineers and systems programmers while those relating to policy matters on resource sharing, data base development, the interrelationship of regional and local system developments etc. must be determined by the library.

Computer systems promise great things for libraries and other information agencies, the major problem is how to realise this potential. It is essential that school libraries develop models for system developments at different levels, local, regional and national and not be overwhelmed by

administrative considerations which may indicate for example that the easiest way to achieve a microfiche catalog is via a centralised system. If the primary objective is something other than a microfiche catalog, then arguments indicating its cost effectiveness are simply not relevant.

MARC AND BIBLIOGRAPHIC RECORDS

Dagmar Schmidmaier

Although many libraries have or are in the process of automating some of their systems, it is rare to find a library without any type of card catalog. In many cases the card catalog is closed and a new computer produced one begun from a certain date. The old file may be converted in stages over a number of years so that in time the library will again have a single catalog file - however this depends largely on the finance available.

With card catalogs the traditional rules for entry are maintained, although every library will interpret them slightly differently!

CODES

In manual cataloging systems, specifically in relation to the card catalog, the data is arranged according to a set of rules (codes). The first half of the 20th century was the renaissance of the card catalog and saw the development of codes for the recording of bibliographic data on the card. The most widely used catalog code in Australia was the Anglo American Cataloging Rules, North American Text (known as AACR1). This code was developed specifically for the large Research Library, but became the internationally accepted code for use in all types of libraries; it was adopted for use in computerised cataloging systems, thereby increasing its status as an international standard. AACR1 has been superceeded by AACR2 where the emphasis is on access points rather than main entry and which provides for different levels of detail in bibliographic records. Statewide school library service cataloging recommendations are usually based on AACR.

ANGLO-AMERICAN CATALOGING RULES

The introduction of computerised systems into libraries and information agencies in the 1960's saw a brief revival of the printed book catalog. However the cost of producing and updating large book catalogs - even if they were computer produced - has proven uneconomical and the 1970's saw the introduction of microformats (microfiche and microfilm). The change in the format of catalogs has implications for the use and future development of catalog codes.

The catalog code provides guidelines for the establishment of entry and heading when recording bibliographic data. Therefore the location of a piece of bibliographical data on a card serves to identify it. With the introduction of computerised systems, each discrete piece of bibliographic data is labelled or tagged, thereby releasing libraries from the restricted card format. These tags are stored in the computer and held there as permanent identifiers of the data, thereby allowing the output (ie the catalog) to be produced in a varieyt of formats.

MARC

Standards or codes have also been developed for tagging bibliographic data in computerised systems - this standard is called MARC, an acronym for MAchine Readable Cataloging.

MARC is an international/national communications format, whereby libraries all over the world can exchange bibliographical data. For example, the tag 245 means that the data following is the title of an item. The Standard was developed in the United States by the Library of Congress in the early 1960's. Most countries have developed their own National MARC standard which, although they vary slightly, are interchangeable. In Australia the National Library of Australia developed the AUSMARC standard.

The significance of tagging each piece of discrete data is that now each piece is a potential access point for retrieval in a computer based system.

MARC - An Introduction to the Tags

A MARC record consists of 4 main parts -

(i) Leader
(ii) Directory
(iii) Fixed fields
(iv) Variable fields

The variable fields contain the bibliographic data. The tags which identify some of these fields are given below.

001 Record control number
(may be ISBN or, if this is not available, an ANB serial number)
050 LC classification number
082 DC number
100 Personal name
110 Corporate name
240 Uniform title
245 Title
250 Edition statement
260 Imprint
300 Collation
350 Price
400 Series statement
500 General note

LC Subject headings

650 Topical
651 Geographic

Added Entries

700	Personal name
710	Corporate name
745	Title

DEFINITIONS

FIELD	A unit of data e.g. author, collation. Each field may comprise one or more subfields.
SUBFIELD	A unit of data within a field
TAG	A label identifying a field

For a complete list of tags used in Australian MARC see -

National Library of Australia. *Australian MARC specification.* Canberra, NLA., 1973.

SAMPLE CATALOGING WORKSHEET USED IN MARC-BASED SYSTEMS

NEW RECORD LOCAL CATALOGUING WORKSHEET NO.

		RECORD NO.	T	Date 1	Date 2	OPTIONS	OPTIONS
		*001	*008				*009
LANGUAGE CODE *041 Area code *043							
LC CLASS NO 050 DDC NO 082							
DDC FEATURE 083							
NAME MAIN ENTRY Personal 100 Corporate 110 Conference 111	*1	0					
TITLE Uniform 240 Collective 243 Title page 245	*24						
EDITION	*250	0					
IMPRINT	*260						
COLLATION	*300	0					
PRICE	*350	0	0				
SERIES	*4						
NOTES	*5						
SUBJECT HEADINGS Name 600 610 611 Title 640 645 Topical 650 Geographic 651	*6						
ADDED ENTRIES Name 700 710 711 Title 740 745	*7						
CROSS REFS & OTHER FIELDS Name 900 910 911 Title 940 945	*9						
COPY INFORMATION 999	*999	0					
	*999	0					
	*999	0					
	*999	0					

112

113

SIH/107

LIBRAMATIC SYSTEMS PTY. LTD.

KEYWORD INDEXING

Dagmar Schmidmaier

KWOC INDEXING WORKSHOP

KWIC is an acronym for Key-Word-In-Context and KWOC is an acronym for Key-Word-Out-of-Context. This type of index is produced by computer, and may be considered an alternative and very inexpensive method of indexing items.

The KWIC/KWOC index and other permuted indexes form part of a group of indexes that are called "unconventional" to differentiate them from subject indexes or classed indexes. The underlying principle of the KWIC/KWOC index is that words instead of concepts can be used for indexing. Keywords, i.e. catchwords or essential words, can be extracted from the title, abstract, or text, and can be used effectively in the index. The context about a keyword helps to define or explain its use in order to lead the user to the exact item he wants. The KWIC/KWOC index is used primarily with titles, and can be edited manually by the addition or deletion of words.

A stoplist is usually provided with this type of index. Words appearing in the stoplist are those that are not meaningful for indexing purposes and are therefore excluded from the indexing process automatically by the computer program.

SAMPLE KWOC

A KWIC/KWOC listing provides multiple points of access to an item by using every keyword in the title as an

index entry. Such a listing can be produced quickly and cheaply.

For example, a KWOC listing for one title - Rosenfeld's Careers in Journalism for the New Woman (070.023) - would appear as follows:

Keyword	Context	Location
CAREERS	ROSENFELD CAREERS IN JOURNALISM FOR THE NEW WOMAN	070.023
JOURNALISM	ROSENFELD CAREERS IN JOURNALISM FOR THE NEW WOMAN	070.023
NEW	ROSENFELD CAREERS IN JOURNALISM FOR THE NEW WOMAN	070.023
ROSENFELD	ROSENFELD CAREERS IN JOURNALISM FOR THE NEW WOMAN	070.023
WOMAN	ROSENFELD CAREERS IN JOURNALISM FOR THE NEW WOMAN	070.023

A KWOC listing may provide a simple, inexpensive and portable index to parts or the whole of a collection.

SOME APPLICATIONS

1. For a whole collection
   - easy way to provide author, title and thus subject/keyword access in a format students and teachers may find simple to use
   - new complete listings easy to generate
   - multiple copies can be made available throughout the school

2. Parts of a collection
   - for locating material in different parts of the school (uncatalogued, pamphlet or ephemeral material)

- for teacher reference and/or teacher produced items, guides etc.
- multiple access to 'problem' materials such as music (by form, theme, performer, composer) or videotape collections

3. Union listings
   - Periodicals
   - Videotapes
   - Audio-visual materials
   - Listing of materials available from various teachers' centres or curriculum centres, e.g. Liverpool Region's Union List generated from accessions information

SOME LIMITATIONS

1. Amount of information which may be included. 80 characters is a standard length for many KWOC programs.

2. Need for indicative titles or use of additional descriptors.

THE KURING-GAI EXPERIMENT

As a result of a Continuing Education course entitled "School Libraries - the Systems Approach" conducted by the Centre for Library Systems, Kuring-gai College of Advanced Education and the Northern Districts Education Centre, it was decided to offer, via the Centre for Library Systems, a KWOC service for school libraries on an experimental basis.

In the experimental system operating at the Centre for Library Systems, it is stressed that the KWOC index is

only one method of providing access to resources and that just as the traditional card catalogue failed in its attempt to be all things to all users so would the KWOC index, if considered in this way. The KWOC index is therefore seen as one index to the collection and would supplement (or perhaps be an index to) any central bibliographic service provided by say a system such as SAERIS or ASCIS. The need for an adequate bibliographic record (e.g. shelf list) for use by the librarian is considered essential and it is hoped that such a record may in time be provided by a central agency, either on a regional or state basis.

The libraries who have experimented with the KWOC system have reacted very positively to date; however it is still early days. There are a number of different applications in operation including union lists of periodicals, lists of video tape holdings, slide collections, total audio visual holdings and entire catalogues. Schools participating include high schools and primary schools, government and independent schools and regional groups consisting of school and public libraries. Output has been primarily on multipart computer stationery, but some libraries have had their indexes printed and one large regional group had the index put out on microfiche.

The interest generated has been so great that the Centre has called a temporary halt to the intake of new members till 1981, to allow the first stage of the evaluation of the experiment to be completed.

Members and potential members meet regularly as a KWOC User Group and have compiled guidelines for indexing specific resources for KWOC, for example a guide to indexing video tapes.

The Centre for Library Systems will continue to provide an environment for experimentation with new ideas and systems. Another project under investigation in 1981 together with the Northern Districts Education Centre concerns the use of the Apple II microcomputer for school library use.

KWOC INDEX SAMPLES

Appendix 2 provides examples of a variety of KWOC listings currently in use in N.S.W. schools.

SYSTEMS ANALYSIS

Dagmar Schmidmaier

Systems analysis "is the logical analysis of the present system, the evaluation of the efficiency, economy, accuracy, productivity and timeliness of existing methods and procedures measured against the established goals of the library and the design of new methods and procedures or modification of existing methods and procedures to improve the flow of information through the system". CHAPMAN, E.A. Library systems analysis guidelines. N.Y., Wiley, 1970. p.19.

The purpose of applying techniques of systems analysis is to provide management with logical analysis of procedures so that decisions about the effectiveness of a system may be made. There are a variety of techniques that may be used to provide the analysis including, flowcharting, work flow analysis, observation and interviewing. Introductory guidelines for flowcharting are included in this section.

In preparing to undertake an analysis of a system the following points should be considered.

1. Establishing the problem.
   It is necessary to state the objectives of the systems study; to determine any constraints such as time and money and to give a brief outline of the procedures.

2. It is necessary to set out the objectives of the sub-system to be analysed.

3. Analysis of existing system.
This involves:

i. organisational analysis, including staff involved in the system and the amount of time spent on each task.

ii. input/output analysis including description and objective of all forms and files used in the system.

iii. procedure analysis which is a description of all tasks involved. Flowcharts may be used here for clarity.

iv. equipment survey, listing and describing all equipment used within the system including extent of use, cost, special features etc.

v. Costing. This section should provide total and unit costs for major activities within the system. It is important to state the formula used to calculate costs and to indicate what basis is used to allocate overhead costs.

4. System evaluation.
This is the most difficult section and consists of quantitative and qualitative evaluation. The quantitative evaluation will provide unit costs and capacities of the system and should relate back to the objectives of the system. The qualitative evaluation allows consideration of the intangible criteria and may comprise indications of user and staff satisfaction etc.

The results of such an analysis should provide you with the means of deciding whether the system meets its objectives as well as information to allow you to compare it to alternative

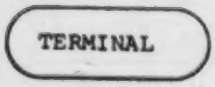
systems/procedures. If the results of the analysis of the old system and those of a proposed new/alternative system, indicate that a change is desirable, you need to determine the basic considerations involved in implementing the new system.

FLOWCHARTING

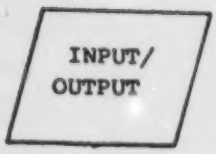
BASIC FLOWCHARTING CONVENTIONS

1. Use a descriptive title.
2. Number, date and initial all pages.
3. The chart runs from top to bottom and left to right on each page.
4. Start the flowchart in the upper left-hand corner, about one inch from the edge.
5. The first three symbols usually are: start / input / process.
6. Use descriptive phrases in all boxes.
7. Have each decision answerable as either yes or no.
8. End the flowchart with an output and a halt symbol.
9. Each chart should have one major input. It may have several outputs.
10. Use directional arrows throughout.
11. Use different numbering schemes for on and off page connectors.
12. Where flow lines would cross, use on-page connectors.
13. Use multiple, small flowcharts rather than one extremely long chart.
14. Include a section which identifies all abbreviations used.

BASIC FLOW CHART SYMBOLS

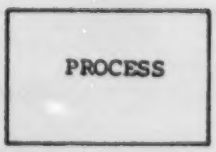


START/STOP SYMBOL



REPRESENTS ANY FORM, MATERIAL, ETC. ENTERING OR LEAVING THE SYSTEM

USED FOR CHOICE BETWEEN ALTERNATIVE COURSES OF ACTION



REPRESENTS ANY OPERATION ON MATERIALS, FORMS, ETC.

CONNECTOR

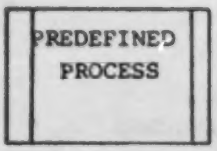
BRANCH TO (OR FROM) ANOTHER PART OF CHART

OFF-PAGE CONNECTOR

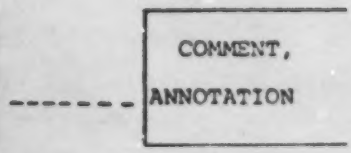
FOR ENTRY TO, OR BRANCH FROM, A PAGE OF THE CHART

FLOW LINES USED TO SHOW LINKING OF OPERATIONS, DECISIONS, ETC.

ARROWHEADS USED ON ALL FLOW LINES TO SHOW DIRECTION OF FLOW

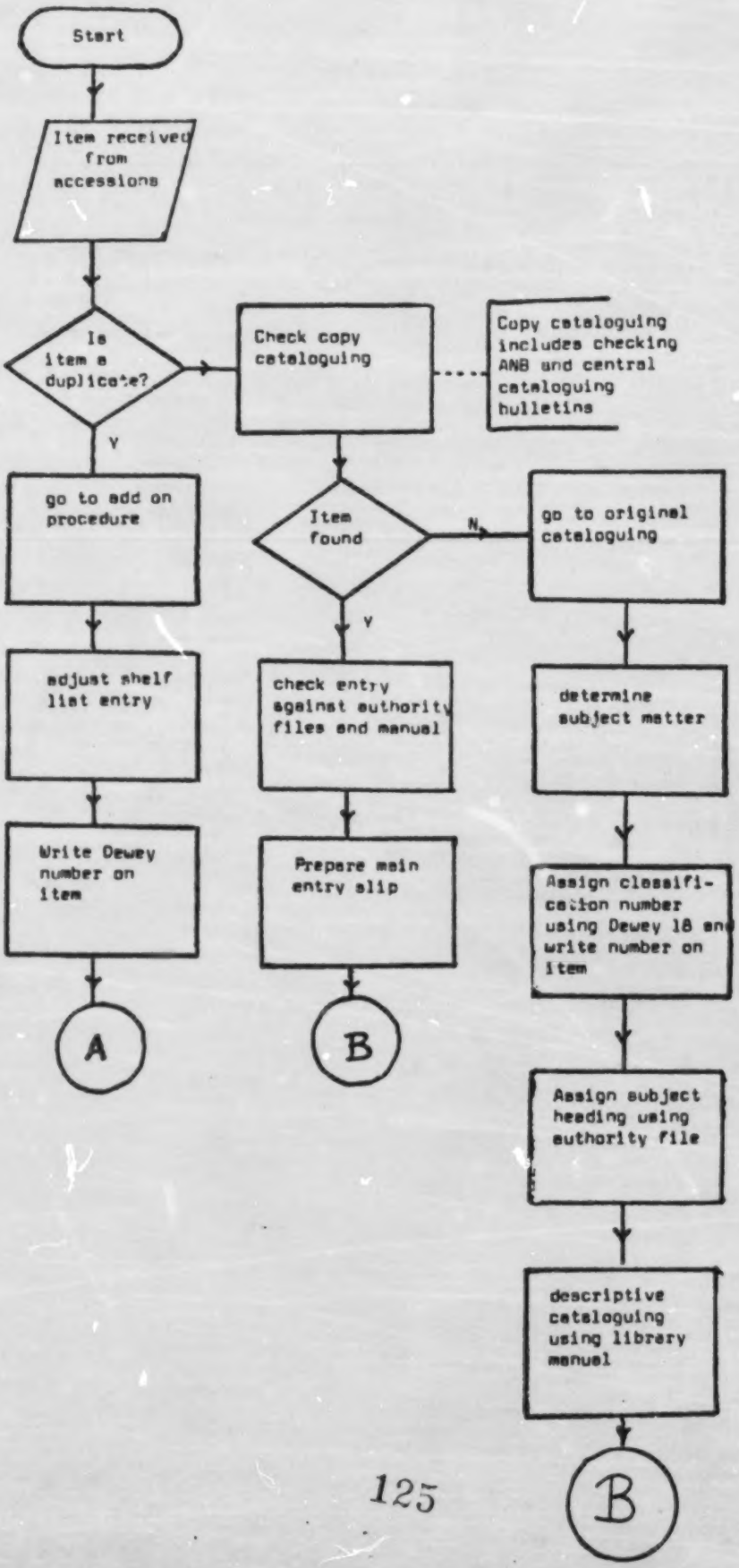


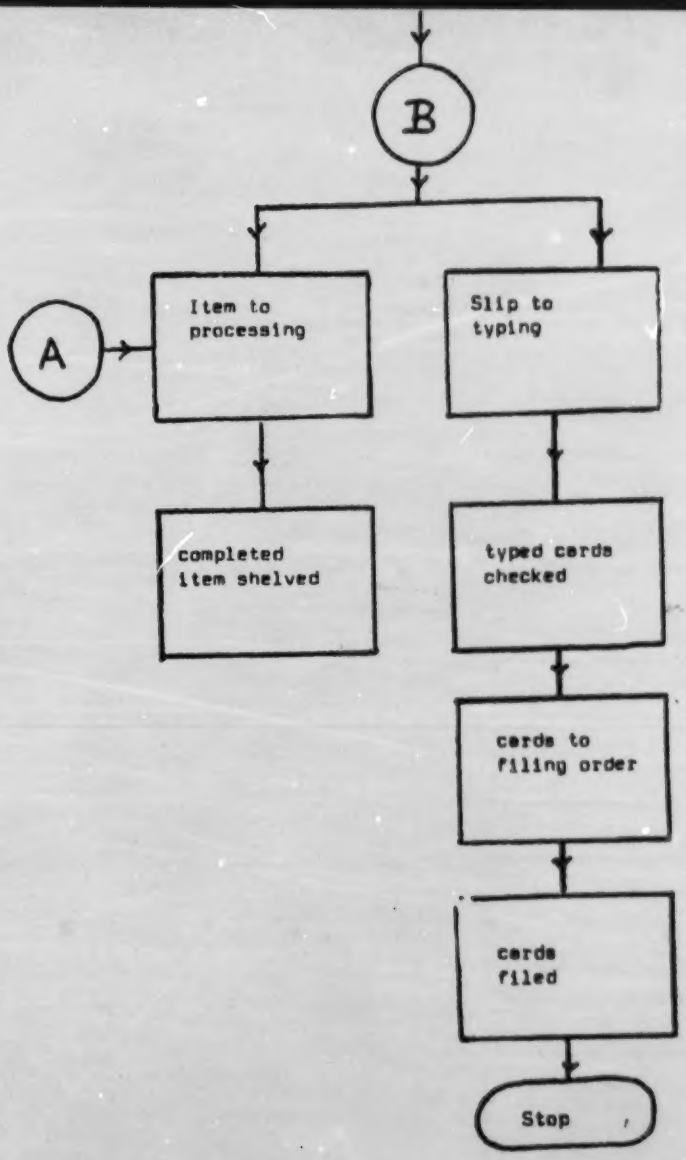
USED TO REFER TO A PROCEDURE CHARTED ON A SEPARATE CHART



USED FOR ADDITIONAL DESCRIPTIVE COMMENT OR CLARIFICATION

PROCEDURES INVOLVED IN MANUAL CATALOGUING




B
A
Item to processing
Slip to typing
completed item shelved
typed cards checked
cards to filing order
cards filed
Stop

SYSTEM STUDY

Marianne Broadbent

INTRODUCTION

The purpose of the System Study is to give participants the opportunity to apply the techniques of system analysis outlined earlier in the course to a Group Task.

The situation described below presents school librarians with a number of familiar problems which need to be analysed in a logical and systematic way.

Participants will be divided into three groups and each will have a resource person available from the course personnel.

By the end of the first session on Day 4 each group should have prepared the outline and major points of a submission to the Regional Director for which they can state a well argued case.

BACKGROUND

The Woodly-Fernly Librarians' Group in Sydney's Westland Region has been meeting about once per term to discuss and exchange ideas and information about their school resources.

The schools included in the group come from two adjoining school districts, Woodly and Fernly. Driving from one extremity of the area to another takes approximately 20 minutes. The group includes eight high school and two primary school librarians. Four of the high schools are government co-educational, two are government single-sex schools and the others are single-sex catholic regional schools.

Among the resources collections of the schools involved are the following specialisations:

* Asian Studies
* Music (including scores, librettos, recordings and cassettes)
* Personal Development (the P.D. Regional Consultant is attached to the staff of one High School)
* The Woodly Municipal Library has an extensive periodical collection and their subject specialisation is Australian history and geography.

The WOOFEL Group has compiled union lists of video-tape holdings and periodicals and operates an informal inter-library loan system for these items. The group sometimes experiences problems with lack of continuity in personnel, but with the help and encouragement of

the reference librarian from Woodly Municipal Library it has continued to function for three years.

RECENT DEVELOPMENTS

A number of recent developments suggests that the group needs to look at its future direction in the context of other regional activities:

* A number of resource centres which loan material to schools have been established and are used as bases by curriculum consultants. It has been found that some of the resources purchased for these centres were already available in a number of nearby schools. Following this revelation, funding of the Centres has declined and their future is now in doubt.

* When the WOOFEL Group approached the Regional Director about staffing issues they found him sympathetic, but he expressed concern about the amount of time the librarians were spending on processing materials.

* The Regional Inspector in charge of Curriculum Services has circularised schools advising that a study is being undertaken to investigate resource sharing within particular districts of the Region, so that more effective use can be made of available resources.

THE IMMEDIATE PROBLEM

The Regional Director has requested a submission from the Woodly-Fernly Librarians' Group on the establishment of a regional processing centre, initially to serve the Woodly and Fernly districts. He is concerned about the lack of co-ordination in the acquisition and circulation of resources in schools and centres in the region, and, also, at the amount of time teacher-librarians are spending in cataloguing and classification tasks that are repeated in many schools.

GROUP TASK: Prepare the outline and major points of a submission concerning the establishment of a computer-based regional processing centre, initially to serve members of the Woodly-Fernly Librarians' Group.

GROUP GOAL: To study the implications of establishing a computer-based regional processing centre in the Westland Region.

GROUP OBJECTIVES: To examine ways in which a regional processing centre could improve the acquisition, processing and availability of resources to schools.

SUGGESTED PROCEDURES

1. Examine current procedures used in the processing of materials

   1.1 Briefly discuss procedures used in the following areas
   - acquisitons
   - accessioning
   - cataloging
   - classification
   - end processing
   - card preparation
   - files created

   1.2 Prepare a diagram or flowchart describing current procedures which are used in most schools.

   1.3 Calculate the cost per unit of cataloging each item for a school library. (Calculations from handout SIN/114 may be used here.)

   1.4 Discuss the suitability of current procedures keeping in mind the Region's current and future needs.

   1.5 Prepare an evaluative statement concerning the suitability of present procedures to meet the current needs and possible future developments in the Region.

2. Examine the way in which a computer-based regional processing centre could operate.

   2.1 Discuss the way in which a processing centre based on the TECHNILIB model could meet the current needs and possible future developments in the Region.

3. Recommend Guidelines for the establishment of a regional processing centre.

   3.1 Discuss and list the objectives of the centre.

   3.2 Suggest a formal structure for the operation of the centre, e.g. management committee, staff, area served, etc.

   3.3 Discuss and list the advantages and disadvantages of establishing the centre.

   3.4 Conclude with a general policy statement from your group on the implications for establishing the centre including the changes/improvements which such a centre could make to the processing and availability of resources in the region, and the compromises that the establishment of such a centre might entail.

FORMAT OF THE SUBMISSION

Your group's submission should be written on the paper provided and include the following major points:

Part A - Current Procedures:

- . Flowchart/diagram - 1.2
- . Per Unit cost of cataloging - 1.3
- . Evaluative statement - 1.5

Part B - Guidelines for Establishment of the Centre

- . The centre's objectives - 3.1
- . Formal structure - 3.2
- . Advantages and disadvantages - 3.3
- . General policy statement - 3.4

SAMPLE COSTING ESTIMATE FOR ORIGINAL CATALOGING AT THE SCHOOL LEVEL*

Marianne Broadbent

1. TASK ANALYSIS FOR PREPARING A SINGLE ITEM FOR USE (1)

P = Professional time C = Clerical time

Accessioning

1. check off item against invoice
2. stamp school ID
3. accession item in register
4. write accession no. on item

4 min. C 100%

Classification and Cataloging

1. descriptive cataloging
2. classify
3. assign subject and added entries
4. create authority files
5. write classification no. on item

12-15 min. P 100%

End Processing

1. label item
2. affix pocket and date due slip
3. cover/reinforce

5-10 min. C 100%

* For a school which maintains a full dictionary catalog.

Card Preparation	1. type cards (avge. of 5) 2. type card for borrowing records 3. check cards	15 min.	C 80% P 20%
Files Created	1. file cards 2. check filing	5 min.	C 70% P 30%
	TOTAL:	41-49 min.	

Of this time approximately 60% is clerical and 40% is professional.

2. COSTING ESTIMATE (2)

(a) Personnel

(i) Professional

- Librarians in schools are paid according to the wage scale for teachers. Based on the wage received by a graduate assistant with five years teaching experience, the average teacher librarian's salary can be estimated at $14,700.

- Down & Young (3) suggest that 15% of the librarian's time is devoted to cataloging, therefore ....

Cost of personnel = annual wage x time spent cataloging x percentage of year spent cataloging

$$= 14,700 \times \frac{15}{100}$$

$$= \$2,205$$

(ii) Non-Professional

- It takes approximately 27 minutes for the clerical assistant to prepare a set of catalogue cards and file them. (Figures based on above task analysis.)
- Assume 1000 items are acquired annually (4), therefore:

Clerical time devoted to cataloging p.a. = no. of items x time spent processing one item

= 1000 x 27

= 27,000 mins. or approx. 450 hours p.a. which is approx. 29.5% of the clerical assistant's time.

As the average clerical assistant's wage is $8,880:

Cost of time = $8880 \times \frac{29.5}{100}$

= $2,620

Total cost of personnel time spent cataloging p.a. = $2,205 + $2,620 = $4,825

Cost per item = $\frac{4825}{1000}$

= $4.83

Therefore, the cost in personnel time to catalogue a single item is approximately $4.83.

(b) Supplies

Catalogue cards: $7.80 per 1000 approx. 8,000 p.a.	62.40
Catalogue practice pads: 30c each approx. 20 p.a.	6.00
Guide Cards: $7.50 per 100 approx. 100 p.a.	7.50
Book labels: $2.70 per 1,000 approx. 3,000 p.a.	8.10
Book pockets: $17.55 per 1,000 approx. 2,000 p.a.	35.10
Due date slips: $4.80 per 1,000 approx. 3,000 p.a.	14.40
Bookcards: $19.50 per 1,000 approx. 2,000 p.a.	39.00
Plastic for book covering (approx.)	100.00
Typewriter ribbons, erasing materials, pens, pencils (approx.)	15.00
TOTAL cost of supplies p.a.	$287.50

Therefore, the cost of supplies per item is approx. 28.8 cents.

(c) Equipment

New typewriter	$250.00
Card sorting aid	23.50
TOTAL initial cost	$273.50

If depreciation on equipment is allowed at

15% (i.e. ($41.03) per annum, then the cost of equipment per item is approx. 4.1 cents.

(d) Cataloging Tools

D.D.C. 19th ed.	41.50
Weihs, J.R. *Nonbook Materials*	8.75
Scott, M.B. and Fennell, D.P. *Cataloging for School Libraries*	4.50
Sears List of Subject Headings	21.00
Chambers Biographical Dictionary	20.00
The World Book Dictionary	57.00
ALA Rules for Filing Catalogue Cards	2.50
	$155.25

The types of tools listed above are necessary cataloging aids but the choice of some of the titles is based on personal preference. Allowing for depreciation of 15% (i.e. $23.29) per annum the cost of these tools per item is approx. 2.3 cents. In addition, as a copy cataloging aid:

Australian National Bibliography (full service) $6[illegible].00 p.a.

is an additional cost per item of 6.3 cents. Therefore, the total cost of cataloging tools per item is (2.3 + 6.3) cents i.e. 8.6 cents.

The average total cost of processing and cataloging a single item is the sum of the following costs:

Personnel	$4.83
Supplies	0.29
Equipment	0.04
Cataloging tools	0.09
	$5.25

In Summary: From the time an item enters the library until the time it is ready for use it has received approximately 41-49 minutes of library staff time and has had approximately $5.25 added to its value.

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(1) This breakdown was prepared by a group of school librarians at the inservice course School Libraries and Information Needs - A Systems Approach (S.D.C. 79/15/329) held on 23, 24, 30 and 31 March, 1979.

(2) Based on GLASMAN, R. "Systems Study of Manual and Computer-based Cataloging for School Libraries." Information Methods Course Assignment, Department of Library and Information Studies, Kuring-gai C.A.E., 1977.

(3) DOWN, D.W. and YOUNG, W.A. "Cataloging for Schools: a report to the Schools Commission." 1975. (Unpublished).

(4) DOWN, D. and YOUNG, W. "How Do Your Acquisitions Rate?" Australian School Librarian, 11-13, (1975).

APPENDIX 1

SCHOOL LIBRARIES AND INFORMATION NEEDS

A SYSTEMS APPROACH

FOUR DAY COURSE PROGRAMME

Organised by:

Northern Districts Education Centre (Sydney)

and

Centre for Library and Information Systems
Kuring-gai C.A.E.

DAY ONE - FRIDAY

9.00 - 9.15	Registration
9.15 - 9.30	Welcome - *Robert Broadbent*
	Official Opening - *Mr. Col Gaut*, Head, In-service Education and Chairman, NSW State Development Committee
9.30 - 10.30	Technological Change - Implications for Libraries - *Dagmar Schmidmaier*
	MORNING TEA
11.00 - 11.30	The Computer - What is it and How can it be used in a Library - *Allen Hall*
11.30 - 12.30	Hardware and Software - *Allen Hall*, *Dagmar Schmidmaier*
	LUNCH
1.30 - 3.30	Computer-Based Practical Session KWIC/KWOC Indexing Workshop Leaders: *Marianne Broadbent* *Dagmar Schmidmaier*

DAY TWO - SATURDAY

9.00 - 10.00	Introduction to Machine-Readable Cataloguing and Copy Cataloguing - *Allen Hall*
10.00 - 11.00	Preparing Machine-Readable Records: Part 1 Workshop Leaders: *Dagmar Schmidmaier* *Marianne Broadbent*
	MORNING TEA
11.30 - 12.30	Preparing Machine-Readable Records: Part 2 Workshop Leaders: *Dagmar Schmidmaier* *Marianne Broadbent*
	LUNCH
1.30 - 3.00	Implications of Computerized Network Developments for School Libraries - *Dagmar Schmidmaier*
3.00 - 3.30	Demonstration of On-Line Information Retrieval System (S.D.I.) - *Marianne Broadbent*

DAY THREE - FRIDAY

9.00 - 10.00 The Systems Approach -
Dagmar Schmidmaier

MORNING TEA

10.30 - 11.00 Introduction to System Study -
Marianne Broadbent

11.00 - 12.00 Techniques of Systems Analysis -
Allen Hall

12.00 - 12.30 System Study:- Group Task: Part 1
Workshop Leaders:
Marianne Broadbent
Dagmar Schmidmaier

LUNCH

1.30 - 3.30 System Study:- Group Task: Part 2
Workshop Leaders:
Marianne Broadbent
Dagmar Schmidmaier

DAY FOUR - SATURDAY

9.00 - 10.30	System Study:- Group Task: Part 3 - Presentations and Discussion - *Robert Broadbent* *Dagmar Schmidmaier* *Marianne Broadbent*
	MORNING TEA
11.00 - 12.15	Survey of Existing Network Systems - Their Relevance to Schools - *Dagmar Schmidmaier*
	LUNCH
1.30 - 3.30	The Current Scene - Some Recent Local Developments Panel session, chaired by *Mr. Frank Meaney*, Assistant Regional Director of Education, Liverpool Region. . *Janet Hansen*, Glebe H.S. . *Di Simpson*, S.C.E.G.G.S. . *Irene Evans*, Colo H.S. . *Garry Titley*, Total Curric. Centre . *Allen Hall*, Exec. Director, CLANN Ltd.
3.30 - 4.00	Plenary Session - *Robert Broadbent*

SCHOOL LIBRARIES AND INFORMATION NEEDS

A SYSTEMS APPROACH

TWO DAY COURSE PROGRAMME

Organised by:

Northern Districts Education Centre (Sydney)

and

Centre for Library and Information Systems
Kuring-gai C.A.E.

DAY ONE

9.00 - 9.15	Registration
9.15 - 9.30	Welcome and Introduction - *Robert Broadbent*
9.30 - 10.30	Technological Change - Implications for Librarians - *Dagmar Schmidmaier*
	MORNING TEA
11.00 - 11.30	The Computer - What is it and How can it be used in a Library - *Allen Hall*
11.30 - 12.30	Hardware and Software - *Allen Hall* Film: "Basic Computer Terms"
	LUNCH
1.30 - 3.30	KWOC Indexing Workshop - *Robert Broadbent* *Alison Atkin*
	AFTERNOON TEA
4.00 - 4.30	Introduction to Machine-Readable Cataloguing - *Allen Hall*
4.30 - 5.30	Preparing Machine Readable Records: Workshop Part 1 - *Marianne Broadbent*
	DINNER
7.00 - 7.45	Preparing Machine Readable Records: Workshop Part 2 - *Marianne Broadbent & Dagmar Schmidmaier*
7.45 - 8.30	Implications of MARC - Discussion Session - *Marianne Broadbent & Dagmar Schmidmaier*

DAY TWO

9.00 - 10.30 Introduction to Systems Analysis and Networking - *Dagmar Schmidmaier*

MORNING TEA

11.00 - 12.30 System Study:- Group Task

Workshop Leaders:

Marianne Broadbent

Robert Broadbent

Dagmar Schmidmaier

LUNCH

1.30 - 3.00 Some Recent Developments - chaired by *Robert Broadbent*

. *Alison Atkin*, Killarney Heights H.S.

. *Di Simpson*, S.C.E.G.G.S.

. *Sue Parks*, Library Services

3.00 - 3.30 Plenary Session and Evaluation

AIMS OF COURSE

* To familiarise school librarians with computer and communications technology and their applications for library services.

* To provide some practical experience with computer applications.

* To introduce participants to techniques and principles of systems analysis and their relevance to meeting the information needs of schools.

PERSONNEL INVOLVED IN THE COURSE

Dagmar Schmidmaier is Chairman of the Department of Library & Information Studies at Kuring-gai C.A.E. She has had experience in university and special libraries, particularly in the area of systems analysis and computer applications in libraries. Dagmar is currently the editor of Lasie, journal of the Library Automated Systems Information Exchange, and a member of the Board of CLANN.

Allen Hall was appointed the first Executive Director of CLANN in January 1979. Allen has been on the lecturing staffs of both Kuring-gai C.A.E. and the School of Librarianship at the University of N.S.W. He is particularly interested in library administration and automation.

Marianne Broadbent is a teacher-librarian in the N.S.W. Department of Education who is currently

working in the Directorate of Studies as a Senior Education Officer (Curriculum Information). She has been deeply involved in the professional activities of the School Libraries Section of the Library Association of Australia, particularly in the area of support services for school libraries. During 1980 Marianne is the President of the N.S.W. Group of the School Libraries Section of the L.A.A.

Robert Broadbent is the Director of the Northern Districts Education Centre at Cheltenham. The Centre has been prominent in encouraging local professional activities for librarians and in particular the formation of local librarians' groups. Robert was convenor of the Support Services Task Force in the North Sydney Region. His particular interests include support structures for school-based curriculum development and classroom applications of audiovisual media.

APPENDIX 2

SAMPLE KWOC OUTPUT

The three examples included here are extracts from the Glebe High School Catalog, the Manly-Warringah Secondary Librarians Group Resource Sharing Project, Union List of Slide Sets and Audio-visual Kits and the Stanton Area Group Union List of Periodical Holdings.

These three listings are in book format, the computer output is photo reduced and the books produced by offset. Other output formats available are multi-part computer stationery and microfiche.

GLEBE HIGH SCHOOL

CATALOG

1981

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HOW TO USE THIS CATALOGUE

This catalogue lists most of the curriculum resources (books, kits and other audio-visual materials) owned by Glebe High School. It does not include text books.

A book or kit can be found in the catalogue by looking for any word in the title or for the surname of the author, e.g. Butterflies In Australia. Brown, O.

Will be listed under

Australia
Brown, O.
Butterflies

These words are called keywords and are printed alphabetically on the left-hand side of each page.

Materials on a specific subject can be located by referring to the relevant words, e.g.

Architecture
Houses
Homes

These keywords are also filed alphabetically on the left-hand side of each page.

Each entry in the catalogue will appear as follows:-

Keyword	Title. Author. Subject.	Call No
Butterflies	Butterflies In Australia. Brown, O. Moths	595 Bro

All the materials in the library are found on the shelves except for some non-print items. A symbol in front of the call number indicates that the material is not on the shelves. These symbols are:-

P - photographs, pictures, posters
K - kits, slides
C - audio cassette

The catalogue also lists materials held in subject storerooms.

The call number will appear as the name of the subject department, e.g.

Soc Sc - Social Science
Home Ec - Home Economics
Ind Arts - Industrial Arts

KEY-WORD	CONTEXT	NUMBER
ABOUT	TALKING ABOUT DRUGS . WYATT, J	613 8 W
ABOUT	TALKING ABOUT RACE . ASH, R RACISM DISCRIMINATION	301 45 A
ABOUT	TALKING ABOUT SCHOOL . PEACEY, N	371 PEA
ABOUT	TALKING ABOUT THE CONSUMER SOCIETY . TURNER, H	339 4 TU
ABOUT	TALKING ABOUT THE FAMILY . ASH, R	301 42 A
ABOUT	TALKING ABOUT THE MASS MEDIA . BAKER, C COMMUNICATION	301 16 B
ABOUT	TALKING ABOUT TUCKER . NICHOLLS, C FOOD GAME	641 3NI
ABOUT	TALKING ABOUT VIOLENCE . LADLEY, P	301 6 LA
ABOUT	TALKING ABOUT WOMEN . BOSTOCK, E	301 41 B
ABOUT	THE FACTS ABOUT A POP GROUP . GELLY, D . WINGS	790 4 GE
ABOUT	THE FACTS ABOUT A SYMPHONY ORCHESTRA . AMIS, J	785 1 AM
ABOUT	THE TRUE BOOK ABOUT OUR LANGUAGE . BRAZIL, D . ENGLISH-LANGUAGE	400 BRA
ABOUT	THINGS ABOUT THE HOUSE . LADYMAN, P . WATER SUPPLY ELECTRICITY GAS	644 LAD
ABOUT	WHAT ABOUT IT SHARON . HARVEY, J . LOVE	F HAR
ABOUT	WHAT ABOUT ME . EVENHUIS, G . WORLD WAR 2 HOLLAND	F EVE
ABOUT	WHAT EVERYBODY SHOULD KNOW ABOUT V D . WHEELER, P . SEX	613 9 WH
ABOVE	BLUE ABOVE THE TREES . CLARK, M . COUNTRY LIFE AUSTRALIA-HISTORY	F CLA
ABUSAGE	USAGE AND ABUSAGE . PARTRIDGE, E . ENGLISH LANGUAGE DICTIONARY	425 PAR
ABUSE	LAND USE OR ABUSE . MCGREGOR, G . SOIL CONSERVATION SLIDES	631 4 MC
ACCIDENTS	DON'T PANIC . WINTER, R . ACCIDENTS HOME CARS PETS CRIME	640WIN
ACCIDENTS	SURVIVAL FOR YOUNG PEOPLE . GREENBANK, A . CAMPING ACCIDENTS FIRST AID	613 6 GR
ACER	ACER NEWSLETTER 3P A. PERIODICAL	371 2 AU
ACER	CATALOGUE OF EDUCATIONAL TESTS AND RESEARCH MATERIALS ACER	371 2AUS
ACER	NEWSLETTER . ACER . EDUCATION-RESEARCH	371 2 AU
ACER	READING APPRAISAL GUIDE . JOHNSON, B . ACER	372 4 J
ACER	SET . ACER . EDUCATION NEWSLETTER 2P A	370 7 AU
ACER	SET . ACER . EDUCATION RESEARCH 2P A.	370 3 AU
ACHIEVEMENT	ASSESSING AND REPORTING STUDENT ACHIEVEMENT . COULTON, G CONTEMPORARY IS	371 2 CO
ACHIEVEMENTS	THE GUINNESS GUIDE TO FEMININE ACHIEVEMENTS . MACKSEY, J BIOGRAPHY WOMEN	080 MAC
ACID	MANUFACTURE OF SULPHURIC ACID . TEACHING RESOURCES CHART	SCIENCE
ACQUIRING	ACQUIRING A HOME . BUYING FINANCE, PERSONAL KIT . TEACHING RESOURCES	332 32 M
ACROSS	ACROSS AUSTRALIA BY INDIAN PACIFIC . ADAM-SMITH, P TRAINS	385 ADA
ACROSS	ACROSS AUSTRALIA BY INDIAN PACIFIC . ADAM-SMITH, P TRAINS	385 ADA
ACROSS	ACROSS THE BARRICADES . LINGARD, J . LOVE PREJUDICE IRELAND	F LIN
ACROSS	ACROSS THE OCEAN . SEALEY, L . SHIPS	F SEA
ACT	NSW VICTORIA TASMANIA ACT AUSTRALIA NORFOLK ISLAND . PAMPHLET BOX	919 4 AU
ACTING	A CRY OF PLAYERS . JOWETT, M . SHAKESPEARE ACTING HISTORY	F JOW
ACTING	THE STAR TRAP . DARKE, M . ROMANCE ACTING	F DAR
ACTION	ACTION CHEMISTRY . ASHCROFT, K .	540 ASH
ACTION	APPRENTICE TO A RIP-OFF . CUNNINGHAM, C . DOUBLE ACTION LIBRARY 4	F CUN
ACTION	BAG FULL OF TROUBLE . LEWIS, G . ACTION LIBRARY 2A	F LEW
ACTION	BEST FRIEND . WILLIAM, H . ACTION LIBRARY 1B	F WIL
ACTION	BIG WHEELS . ROBERTS, L . TRUCKS DOUBLE ACTION 1	F ROB
ACTION	CALLING STATION EARTH . WILLIAMS, G . SCIENCE FICTION ACTION LIBRARY 3A	F WIL
ACTION	DEPARTMENT STORE MODEL . ROBINSON, N . DOUBLE ACTION LIBRARY 1	F ROB
ACTION	GIRL ALONE . MANN, P . LOVE ACTION LIBRARY 1	F MAN
ACTION	GOING FOR THE WIN . PINIAT, J BASKETBALL ACTION LIBRARY 1	F PIN
ACTION	HARBOURS IN ACTION . BURRETT, T PORTS	387 1 BU
ACTION	MILLION DOLLAR HUNT . STREIB, D . ACTION LIBRARY 1	F STR
ACTION	MYSTERY OF THE CRYING CHILD . AINSWORTH, N . ACTION LIBRARY 2A	F AIN
ACTION	ON THE RUN MONTGOMERY, M . ACTION LIBRARY 4A	F MON
ACTION	POPBUT . EATON, T . COMICS ACTION LIBRARY 4A	F EAT
ACTION	SILVER DOLLAR MYSTERY . CARSWELL, L . ACTION	F CAR
ACTION	STOP THIEF BUTTERWORTH, W ACTION LIBRARY 2A	F BUT

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KEY-WORD	CONTEXT	NUMBER
ACTION	TELL ME WHEN I CAN GO . LITTLE, L . DOUBLE ACTION LIBRARY 3	F LIT
ACTION	E DROPOUT . BORISOFF, N . ACTION LIBRARY 3A	F BOR
ACTION	THE EARTH IN ACTION . HYDE, M GEOLOGY	550 HYD
ACTION	THE GIRL WHO KNEW RULE ONE . LYMAN, M . LONELINESS DRUGS ACTION	F LYM
ACTION	THE IF MACHINE SIROF, H . SCIENCE FICTION . ACTION LIBRARY	F SIR
ACTION	THE MYSTERY OF THE PINK HOUSE . DEE, M . ACTION LIBRARY	F DEE
ACTION	THE MYSTERY OF THE SPIDER'S WEB . CARSWELL, L ACTION LIBRARY 3A	F CAR
ACTION	THE NEW GIRL . SPRAGUE, J . ROMANCE ACTION	F SPR
ACTION	THE PROMISE RING . STEWART, J . DOUBLE ACTION LIBRARY 4	F STE
ACTION	THE STRIKEOUT GANG STRIKES AGAIN . ROTH, A . ACTION LIBRARY 4A	F ROT
ACTION	THE TANKER DRIVER . BUTTERWORTH, W ARMY DOUBLE ACTION LIBRARY 3	F BUT
ACTION	TV CAMERA THREE . TEALL, K . DOUBLE ACTION LIBRARY 2	F TEA
ACTION	WADE'S PLACE . PAIGE, H ACTION TWINS	F PAI
ACTION	WATIONS IN ACTION . ERCA . HISTORY, MODERN INTERNATIONAL RELATIONS	327 EDU
ACTION, WORLD	THE SPACE AGE . TAYLOR, R . ACTION, WORLD SERIES	REMEDIAL
ACTION LIBRARY	FOREST FIRE . MARA, B . ACTION LIBRARY 2A	F MAR
ACTION LIBRARY	RIDE ALONG . STREIB, D . POLICE ACTION LIBRARY 3A	F STR
ACTION SERIES	NO GIRLS ALLOWED . HARVEY, K . SURFING LOVE-STORIES ACTION SERIES	F HAR
ACTION SERIES	NOW IS NOW . MANN, P . LOVE-STORIES ACTION SERIES	F MAN
ACTION WORLD	RACING CARS AND BIKES . ROYSTON, R . ACTION WORLD SERIES	REMEDIAL
ACTION WORLD	THE FIRST WORLD WAR . HEALEY, T . WORLD WAR 1 ACTION WORLD SERIES	REMEDIAL
ACTION WORLD	THE SECOND WORLD WAR . HEALEY, T . WORLD WAR 2 ACTION WORLD SERIES	REMEDIAL
ACTIVITIES	CAREER PLANNING ACTIVITIES . UNDERWOOD, K INSERVICE EDUCATION	331 1 UN
ACTIVITIES	TERM 5 ACTIVITIES PROGRAMMES . CONTEMPORARY ISSUES	371 3LEE
ACTIVITY	ACTIVITY SERIES OF THE METALLIC ELEMENTS TEACHING RESOURCES CHART	SCIENCE
ACTOR	THE ACTOR . JACKSON, A . SPIRALS	F JAC
ADAM-SMITH, P	ACROSS AUSTRALIA BY INDIAN PACIFIC . ADAM-SMITH, P TRAINS	385 ADA
ADAM-SMITH, P	ACROSS AUSTRALIA BY INDIAN PACIFIC . ADAM-SMITH, P . TRAINS	385 ADA
ADAM-SMITH, P	ISLANDS OF THE BASS STRAIT . ADAM-SMITH, P . FURNEAUX IS FLINDERS IS	919 46 A
ADAM LINDSAY GORDON	POEMS OF ADAM LINDSAY GORDON . GORDON, A	828 1 GO
ADAMS, C	THE GENDER TRAP . ADAMS, C . MEDIA SEX ROLES	301 41AD
ADAMS, H	BOATS AND SHOES . ADAMS, H . COSTUME HISTORY	685 ADA
ADAMS, H	OIL FROM THE GROUND . ADAMS, H . PETROLEUM FUEL	553 ADA
ADAMS, K	THE FIRST AUSTRALIANS . ADAMS, K CONVICTS ABORIGINES AUSTRALIA-HISTORY	994 ADA
ADAMSON, G	MACHINES AT HOME . ADAMSON, G HOUSES HOUSEHOLD EQUIPMENT HISTORY	644 ADA
ADAMSON, J	AUSTRALIAN FILM POSTERS 1906-1960 ADAMSON, J . HISTORY	769ADA
ADAMSON, J	LIVING FREE ELSA AND HER CUBS . ADAMSON, J . LIONS	F ADA
ADAPTATION	MEAT EATERS . ADAPTATION EASY READING ED	599 BUR
ADDITION	SPECIAL EDUCATION FILE ADDITION CENTRAL MET REGION BULLETIN	371 9 CE
ADELAIDE	HOBBIES . ST PATRICK'S DAY . CHINESE NEW YEAR ADELAIDE FESTIVA CASSETTE	394 2 L
ADELAIDE	THE STRANGE AFFAIR OF ADELAIDE HARRIS . GARFIELD, L . HUMOUR	F GAR
ADLER, I	IRRIGATION - CHANGING DESERTS INTO GARDENS . ADLER, I	631 7 AD
ADOPTION	I WANT TO BE ME . LONSDALE, L . ADOPTION ORBIT	F LON
ADVANCE	ADVANCE AUSTRALIA FAIR . ROYAL AUSTRALIA NAVY CASSETTE	784 7 R
ADVANCING	ADVANCING WITH SCIENCE . BODEN, A	500 ADV
ADVENTURE	A HUNDRED MILLION FRANCS . BERNA, P. ADVENTURE	F BER
ADVENTURE	A PISTOL IN GREENYARDS . HUNTER, M SCOTLAND-HISTORY ADVENTURE	F HUN
ADVENTURE	AFRICAN ADVENTURE . PRICE, W	F PRI
ADVENTURE	AMAZON ADVENTURE . PRICE, W	F PRI
ADVENTURE	AND THE EYES MOVED . MORGAN, S. ADVENTURE TREND SERIES	F MOR
ADVENTURE	BIGGLES BREAKS THE SILENCE JOHNS, W . ADVENTURE	F JOH
ADVENTURE	BILLABONG'S LUCK . BRUCE, M . ADVENTURE	F BRU
ADVENTURE	CARAVAN TO CACCARES . MACLEAN, A . ADVENTURE	F MAC
ADVENTURE	CHANGES FOR THE CHALLONERS . ALLAN, M . ADVENTURE	F ALL

MANLY-WARRINGAH SECONDARY LIBRARIANS GROUP

RESOURCE SHARING PROJECT

UNION LIST OF SLIDE SETS AND AUDIO-VISUAL KITS

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PREFACE

Librarians in the Manly-Warringah Librarians Group compiled this union list so that a wide range of audio-visual materials, which are frequently expensive items, would be available to schools in the area. It was anticipated that there would be a large number of items common to all schools, however it was found that there were nearly 1200 different kits held by the participating schools.

The materials included in this listing comprise sets of slides and kits, i.e. sets of material in more than one format. No videotapes are included. Audiocassettes are included only when they comprise portion of a kit.

All materials are listed under title. Where titles do not adequately describe contents, a subject descriptor has been added to the entry. Material may be found by referring to any word in the title of the kit. For example, Energy release in the living cell will be indexed under

Energy
Release
Living
Cell

in the left hand column.

Following the title (or subject descriptor) indication is given about the format of materials in the kit. For example, N S means that the kit consists of notes and slides. A full list of abbreviations is included at the end of this preface.

The right hand column of the listing indicates which school (or schools) holds the kit. Schools or libraries wishing to have access to any of the material in the list should contact the librarian at the particular school.

ALISON ATKIN,
CO-ORDINATOR

ABBREVIATIONS OF PARTICIPATING SCHOOLS

B - Barrenjoey High School, Avalon Beach.
BB - Balgowlah Boys' High School, Balgowlah.
BH - Beacon Hill High School, Beacon Hill.
KH - Killarney Heights High School, Killarney Heights.
M - Mackellar Girls' High School, Many Vale.
MB - Manly Boys' High School, North Curl Curl.
MG - Manly Girls' High School, Brookvale.
MM - Mater Maria College, Warriewood.
N - Narrabeen High School, Narrabeen.
P - Pittwater High School, Mona Vale.
PH - The Pittwater House Schools, Collaroy.
SA - Saint Augustine's College, Brookvale.
SM - Stella Maris College, Manly.

ABBREVIATIONS OF FORMAT OF AUDIO-VISUAL MATERIALS

B - Book/booklet.
C - Cassettes (audio)
D - Documents.
F - Filmstrips.
J - Jackdaw kit or similar type.
K - Kit (used only where format of materials not supplied by school.)
M - Maps.
N - Notes.
P - Photographs/posters.
R - Records (audio)
S - Slides.
SM - Stencil masters.
SP - Study prints.
T - Tape (audio).
W - Worksheets.

KEY-WORD	CONTEXT	NUMBER
ABBEY	WESTMINSTER ABBEY . J	KH
ABORIGINAL	ABORIGINAL ART - STORY PICTURES . F N	SA SM
ABORIGINAL	AUSTRALIA . ABORIGINAL PAINTINGS FROM ARNHEM LAND . S	SA
ABORIGINAL	ELEMENTS OF ABORIGINAL ART . F N	SA SV
ABORIGINAL	THE AUSTRALIAN ABORIGINAL HERITAGE . C R T	VR MV
ABORIGINES	ABORIGINES AND EUROPEANS . B C N	V
ABORIGINES	ABORIGINES TODAY . N P W	VR
ABORIGINES	AUSTRALIAN ABORIGINES . N P	VG
ABOUT	EXPLORATION WAS FINDING OUT ABOUT OUR REMOTE PAST S	VM
ABROAD	VIKINGS AT HOME AND ABROAD F C N	RH
ABUSES	MAN AND HIS ENVIRONMENT : USES AND ABUSES . C N S	VR
ACCURACY	ACCURACY IN MEASUREMENT . B S	P
ACID	ACID BASE THEORIES . S	SA
ACQUIRING	ACQUIRING A HOME . B E N T	CP KH VR
ACROPOLIS	ACROPOLIS S	PR
ACTION	STUDY AND ACTION PACK FOR WORLD DEVELOPMENT . UNDERDEVELOPMENT D P	R
ACTION	THE GEOLOGICAL ACTION OF WIND AND ICE . S N	SA
ADAPTATION	ENVIRONMENTAL PROCESSES ADAPTATION AND EVOPUTION . N S	SA
ADAPTATIONS	ADAPTATIONS OF FLOWERING PLANTS . S	SA P
ADELAIDE	A MODERN WESTERN CITY : ADELAIDE . B N W	M
ADMINISTRATION	EGYPT : HISTORY AND ADMINISTRATION . S	P
ADOLESCENT	ADOLESCENT PRAYER . RELIGION . S C N	MV
ADOLESCENTS	THE SPEECH OF AUSTRALIAN ADOLESCENTS : A SURVEY . ENGLISH . B S C	VR
ADVANCEMENT	THE ADVANCEMENT OF WOMEN . N S	MV
ADVENTURE	A LIFE OF ADVENTURE . K	P
ADVENTURERS	MERCHANT ADVENTURERS J	KH
AERIAL	AERIAL VIEWS OF TOKYO . S	M
AFFAIRS	MANAGING THE FAMILY'S AFFAIRS . C F	VG
AFGHANISTAN	MORE THAN A SIP OF WATER . AFGHANISTAN . N S	M
AFRICA	AFRICA EASTERN . F N	M
AFRICA	AFRICA NORTHERN MEDITERRANEAN AND DESERT . F N	M
AFRICA	AFRICA SOUTHERN . F N	M
AFRICA	AFRICA WESTERN . F N	M
AFRICA	AFRICA . CULTURE . C N S	SA
AFRICA	EARTH FROM SPACE . ASIA . AFRICA . AMERICAS . S	SA
AFRICA	EASTERN AFRICA . K	VG
AFRICA	THE IDEAS CENTRE AFRICA PACKET . B N P	P
AFRICA	THE NEW AFRICA . S	SA
AFRICA	THE SAMO OF UPPER VOLTA A PEOPLE IN WEST AFRICA . N P	R
AFRICAN	TRADITION AND CHANGE IN FOUR SOCIETIES . SOUTH AFRICA . B E T	E V P KH
AFRICAN	AFRICAN CULTURAL BACKGROUNDS . S	SA
AFRICAN	AFRICAN DROUGHT RELIEF . K	VG
AFRICAN	AFRICAN DROUGHT RELIEF . N S	M
AGE	AGE OF LEONARDO AND MICHELANGELO F C	P
AGE	AGE OF REPTILES . DINOSAURS . P	SA
AGE	THE AGE OF PROGRESS BRITAIN 1750 - 1815 S N	SA SV
AGE	THE ICE AGE . 4E N	SA
AGES	VICTORIAN AGE C E	P
AGES	BETWEEN TWO AGES F N	SM
AGES	BETWEEN TWO AGES PRE INDUSTRIAL REVOLUTION S N	SA

KEY-WORD	CONTEXT	NUMBER
AGES	MIDDLE AGES F C N	P
AGES	MUSICAL INSTRUMENTS OF THE MIDDLE AGES . S	P
AGINCOURT	THE BATTLE OF AGINCOURT J	KH
AGRICULTURE	AGRICULTURE IN FRANCE . C N SW F	P
AGRICULTURE	AGRICULTURE IN WEST MALAYSIA . S	M
AGRICULTURE	CHINESE AGRICULTURE . N S	WW
AGRICULTURE	JAPAN . LAND AND AGRICULTURE . N S	P SA
AGRICULTURE	JAPANESE AGRICULTURE . S	M
AGRICULTURE	NITROGEN AND ITS COMPOUNDS . AGRICULTURE N S	SA
AIR	AIR POLLUTION . F N	WW P
AIR	ENGLAND BY AIR VIA NORTH AMERICA . F N	SW
AIR	SYDNEY FROM THE AIR . B N S	KH
AIRCRAFT	AIRCRAFT IN MOTION . S	SA
AJANTA	INDIA - PAINTINGS FROM THE AJANTA CAVES . N S	SA
ALBANS	ST ALBANS CATHEDRAL . S	P
ALBANS	SAINT ALBANS CATHEDRAL . ARCHITECTURE . N S	SA
ALCOHOL	TOBACCO AND ALCOHOL . C F	P
ALGERIA	ALGERIA COUNTRY AND PEOPLE . C N P	A
ALIENATION	NO MAN IS AN ISLAND . ALIENATION . C R S	VG
ALLEMANDE	LA REPUBLIQUE FEDERALE ALLEMANDE . GERMANY . FRENCH . 3 PARTS . N S	KH
ALSACE	ALSACE LORRAINE . C N S	SA
ALSACE-LORRAINE	ALSACE-LORRAINE . FRANCE . C N SW F	P
ALTERNATIVE	WOMEN IN SOCIETY : AN ALTERNATIVE IDEOLOGY . C S	VG
ALUMINIUM	BORON AND ALUMINIUM . S	SA
AMERICA	ENGLAND BY AIR VIA NORTH AMERICA . F N	SW
AMERICA	GLACIAL EROSION IN NORTH AMERICA . S N	SA
AMERICA	GLACIAL EROSION IN NORTH AMERICA . S N	SA
AMERICA	LATIN AMERICA . C S	SA
AMERICA	NORTH AMERICA THE CORN BELT . S	SA
AMERICA	THE INDUSTRIAL REVOLUTION IN AMERICA . C F	P
AMERICAN	AMERICAN REVOLUTION . N S	SA
AMERICAN	THE AMERICAN REVOLUTION . J N	KH S
AMERICAS	EARTH FROM SPACE . ASIA . AFRICA . AMERICAS . S	SA
AMPHIBIANS	AMPHIBIANS AND REPTILES . SP	W
ANALYSIS	CHROMATOGRAPHY II. BIOLOGICAL ANALYSIS . S	SA
ANATOMY	DISSECTION AND ANATOMY OF A FROG . S	SA
ANCIENT	ANCIENT ATHENS S N	SP
ANCIENT	ANCIENT BABYLONIA S	SA
ANCIENT	ANCIENT EGYPT S N	WW
ANCIENT	ANCIENT GREECE C F N	P
ANCIENT	ANCIENT GREECE S	SA
ANCIENT	ANCIENT ROME F N	KH
ANCIENT	ANCIENT ROME S	SP
ANCIENT	ANCIENT ROME S N	SA
ANCIENT	ANCIENT ROME ART C F N	P
ANCIENT	ART AND MAN ANCIENT GREECE F P C SW N	VG
ANCIENT	EXPLORERS IN THE ANCIENT WORLD C S	VG
ANCIENT	GUIDE TO THE MONUMENTAL CENTRE OF ANCIENT ROME . N S	SA
ANCIENT	HISTORICAL RECONSTRUCTION OF ANCIENT GREECE P W	W
ANCIENT	INDUSTRY IN ANCIENT ROME S N	SA

STANTON AREA GROUP

UNION LIST OF PERIODICAL HOLDINGS

1980

PARTICIPATING LIBRARIES:

Australia Council Library

Cremorne Girls' High School
Crows Nest Boys' High School
Loreto Convent
Marist Bros. North Shore High School
Monte Sant' Angelo College
Mosman Public School
Neutral Bay Public School
North Sydney Boys' High School
North Sydney Demonstration School
North Sydney Girls' High School
North Sydney Technical College
Queenwood School
Redlands
St. Aloysius' College
St. Ignatius' College
Stanton Library
Sydney Church of England Grammar School
Sydney Grammar School
Wenona
Willoughby Girls' High School

NOTE This is a KWOC (Key-Word-out-of-Context) Index. Each word in the title of the periodical appears in the alphabetical listing of Key Words, with the full title and schools subscribing to that title.

This edition does not include a listing of each school's holdings, nor an alphabetical list of the periodicals, both of which appeared in the previous editions.

The titles of a number of periodicals have been changed. Both the original and new titles have been retained in the listing as the original title is cited in the earlier editions of APAIS, Guidelines and Pinpointer.

No attempt will be made to indicate the actual holdings of each library. The first library listed under each title is assumed to have the most complete run and therefore should be the first library contacted.

NATIONAL GEOGRAPHIC. As all the schools holding this publication will not fit on one line on the print-out, Monte Sant' Angelo College is the only library listed as it holds the longest run.

ABBREVIATIONS:

AASIAN	AUSTRALASIAN
AG	AGRICULTURAL
ANZ	AUSTRALIA(N) & NEW ZEALAND
ASSOC	ASSOCIATION
AUST	AUSTRALIA
AUSTN	AUSTRALIAN
BULL	BULLETIN
BUR	BUREAU
CONS	CONSERVATION
DEPT	DEPARTMENT
EC	ECONOMIC(S)
FOR	FOREIGH
GOVT	GOVERNMENT
J	JOURNAL

NOTE:

Words of 2 letters or less do not key word e.g. AG, EC, nor do common words such as FOR

XA	Indexed in APAIS
XG	Indexed in Guidelines
XP	Indexed in Pinpointer

AC	Australia Council Library
CG	Cremorne Girls' HIgh School
CNB	Crows Nest Boys' High School
LOR	Loreto Convent
MBNS	Marist Bros. North Shore HIgh School
MPS	Mosman Public School
MSA	Monte Sant' Angelo College
NBP	Neutral Bay Public School
NSB	North Sydney Boys' High School
NSDS	North Sydney Demonstration School
NSG	North Sydney Girls' High School
NSTC	North Sydney Technical College
QS	Queenwood School
RED	Redlands
S	Sydney Church of England Grammar School
SA	St. Aloysius' College
SGS	Sydney Grammar School
SIC	St. Ignatius' College
ST	Stanton Library
WEN	Wenona
WG	Willoughby Girls' High School

REFERENCES

ACES REVIEW
see
AUSTN COUNCIL FOR EDUCATIONAL STANDARDS REVIEW

A.I.D.A. BULLETIN
see
AUST INDUSTRIES DEVELOPMENT ASSOC BULL

AJADD
see
AUST J OF ALCOHOLISM AND DRUG DEPENDENCE

AUSTRALIAN DEPARTMENT OF HEALTH. NATIONAL DRUG INFORMATION SERVICE. TECHNICAL INFORMATION BULLETIN
see
TECHNICAL INFORMATION BULL. NATIONAL DRUG INFORMATION SERVICE

BANK OF NEW SOUTH WALES ETRUSCAN
see
ETRUSCAN

BULLETIN OF THE CENTRE OF CHILDREN's BOOKS
see
CENTRE FOR CHILDREN'S BOOKS BULL

C.S.I.R.O. ECOS
see
ECOS

C.S.I.R.O. RURAL RESEARCH
see
RURAL RESEARCH

COMMERCIAL BANKING COMPANY OF AUSTRALIA ECONOMIC REVIEW
see
EC REVIEW

ECONOMIC SOCIETY OF AUSTRALIA AND NEW ZEALAND ECONOMIC PAPERS
see
EC PAPERS

HISTORY TEACHERS ASSOCIATION OF NEW SOUTH WALES. TEACHING HISTORY
see
TEACHING HISTORY

INSTITUTE OF PUBLIC AFFAIRS. IPA REVIEW
see
IPA REVIEW

JOURNAL OF SOIL CONSERVATION SERVICE OF NEW SOUTH WALES
see
SOIL CONSERVATION SERVICE OF NSW J

NEW SOUTH WALES GEOGRAPHY TEACHERS ASSOCIATION GEOGRAPHY BULLETIN
see
GEOGRAPHY BULL

NEW SOUTH WALES. SOIL CONSERVATION SERVICE. JOURNAL
see
SOIL CONSERVATION SERVICE OF N.S.W. J

SASTA JOURNAL
see
SOUTH AUSTN SCIENCE TEACHERS ASSOC J

SOUTH AUSTRALIA. EDUCATION DEPARTMENT SCHOOL LIBRARIES' BRANCH. REVIEW
see
REVIEW

STAMP MONTHLY
see
GIBBONS STAMP MONTHLY

KEY-WORD	CONTEXT	NUMBER
AASIAN	AASIAN ATHLETICS MBNS S NSB	XA
AASIAN	AASIAN DIRT BIKE NSTC	XA XP
AASIAN	AASIAN TRACK AND FIELD MBNS S NSB	XA
ABACUS	ABACUS NSTC	XA
ABITARE	ABITARE ST	
ABORIGINAL	ABORIGINAL HEALTH WORKER NSG	
ABORIGINAL	ABORIGINAL NEWS ST SA MBNS S NSG CG NSB NSTC RED SGS SIC WEN CNB	XA
ABORIGINAL	ABORIGINAL QUARTERLY SA S SGS CG WEN NSG	
ABSTRACTS	CSIRO ABSTRACTS ST	
ABSTRACTS	LIBRARY AND INFORMATION SCIENCE ABSTRACTS ST	
ACADEMIC	AUSTN ACADEMIC AND RESEARCH LIBRARIES NSTC	XA
ACADEMY	AUSTN ACADEMY OF SCIENCE RECORDS SIC	
ACCOUNTANT	AUSTN ACCOUNTANT ST	XA
ACCOUNTANT	CHARTERED ACCOUNTANT IN AUST NSTC ST	XA
ADMINISTRATION	AUSTN J OF PUBLIC ADMINISTRATION ST NSTC	XA
ADMINISTRATION	J OF EDUCATIONAL ADMINISTRATION S	XA
ADVANCEMENT	SEARCH (ANZ ASSOC FOR THE ADVANCEMENT OF SCIENCE) ST	XA
AERO	AERO MODELLER NSTC SGS	XP
AFFAIRS	AUSTN FOR AFFAIRS RECORD ST S MBNS WEN MSA NSG CG NSB RED SIC SA NSTC	XA XG
AFFAIRS	CURRENT AFFAIRS BULL ST MBNS NSB SIC LOR CG MSA WEN NSTC NSG AC SA SGS	XA XG
AFFAIRS	INTERNATIONAL AFFAIRS SGS	
AFFAIRS	PACIFIC AFFAIRS ST	XA XG
AFFAIRS	REVIEW OF INDONESIAN AND MALAYAN AFFAIRS NSB	XA
AGORA	AGORA SIC S	XA
AIRBORNE	AIRBORNE NSB CNB SGS	
AIRWAYS	QANTAS AIRWAYS NBP SA S	XA
ALCOHOLISM	AUSTN J OF ALCOHOLISM AND DRUG DEPENDENCE NSB S	XA
ALERT	ALERT CG CNB NSG	XA
ALLER	IN ALLER WELT S RED SA CNB	
ALUMINIUM	ALUMINIUM CNB	XA XG
AMERICA	ART IN AMERICA AC CG	
AMERICAN	AMERICAN CINEMATOGRAPHER AC NSTC	
AMERICAN	SCIENTIFIC AMERICAN S ST CG RED WEN NSB MBNS SIC NSTC NSG QS SGS	XA XG
ANCIENT	ANCIENT SOCIETY S SIC MBNS NSTC CNB	XA
ANCIENT	EDUBBA STUDIES IN ANCIENT HISTORY S MBNS	
ANGLERS	AUSTN ANGLERS FISHING WORLD CNB	
ANNALS	ANNALS MSA SIC	XA
ANS	PLAYS ANS PLAYERS SGS	XC
ANTHROPOLOGICAL	ANTHROPOLOGICAL FORUM AC	XA
ANZ	ANZ BANK BUSINESS INDICATORS S SIC MBNS SGS	XA
ANZ	ANZ BANK QUARTERLY SURVEY S NSB SA NSG ST SIC	XA XG
ANZ	ANZ J OF SOCIOLOGY NSTC ST	XA
APAIS	APAIS ST S MBNS NSTC AC SGS SIC NSB	
APC	APC REVIEW SIC	
APPRAISAL	APPRAISAL S SGS	
APPRENTICE	APPRENTICE TRAINING OFFICERS ASSOC NEWSLETTER NSTC	
APPRENTICESHIP	APPRENTICESHIP NEWS NSTC	XA
ARAMCO	ARAMCO WORLD MAGAZINE NSG S NSB CNB	
ARCHAEOLOGY	AUSTN J OF BIBLICAL ARCHAEOLOGY S	XA
ARCHITECTUAL	ARCHITECTUAL DESIGN (UK) NSB	XA

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KEY-WORD	CONTEXT	NUMBER
ARCHITECTURL	ARCHITECTURE AUST AC ST	XA
ARCHITECTURE	ART AND ARCHITECTURE ST	
ARCHIVES	ARCHIVES AND MANUSCRIPTS S	XA
ARCHIVES	KEESINGS CONTEMPORARY ARCHIVES ST S	
ARIEL	ARIEL SIC	
ART	ART AND ARCHITECTURE ST	
ART	ART AND ARTISTS AC ST	
ART	ART AND AUST ST AC MSA NSG QS	XA XG
ART	ART IN AMERICA AC CG	
ART	ART INDEX ST AC	
ART	ART INTERNATIONAL ST AC WEN S QS	XA
ART	ART J AC	
ART	ART NEWS CNB AC	XA
ARTFORUM	ARTFORUM AC	
ARTISTS	ART AND ARTISTS AC ST	
ARTS	ARTS MAGAZINE AC	
ARTS	ARTS MONTHLY AC	
ASIA	ASIA MAGAZINE MSA	
ASIA	ASIA TEACHERS ASSOC BULL SIC	XA
ASIA	SOUTHEAST ASIA NSB	
ASIAN	ASIAN BUR AUST SA	
ASIAN	ASIAN SURVEY ST MSA	XG
ASIAN	IMPACT A MONTHLY ASIAN MAGAZINE FOR HUMAN DEVELOPMENT SIC	
ASIAN	J OF ASIAN STUDIES (HONG KONG) NSB	
ASPECT	ASPECT ST	XA
ASSOC	APPRENTICE TRAINING OFFICERS ASSOC NEWSLETTER NSTC	
ASSOC	ASIA TEACHERS ASSOC BULL SIC	XA
ASSOC	AUSTN INDUSTRIES DEVELOPMENT ASSOC BULL S MBNS	XA
ASSOC	EC J OF THE EC TEACHERS ASSOC OF NSW NSTC SIC	XA
ASSOC	HISTORY J OF THE HISTORICAL ASSOC SA SIC	
ASSOC	HISTORY TEACHERS ASSOC OF NSW NEWSLETTER NSB SIC NSTC	XA
ASSOC	J OF HISTORY VICTORIAN HISTORICAL ASSOC FOR SENIOR STUDENTS SIC S	XA
ASSOC	J OF PRIMARY ENGLISH TEACHERS ASSOC NBP	
ASSOC	LIBRARY ASSOC RECORD ST	XA
ASSOC	SCHOOL LIBRARY ASSOC OF QUEENSLAND J S	XA XG
ASSOC	SEARCH (ANZ ASSOC FOR THE ADVANCEMENT OF SCIENCE) ST	XA
ASSOC	SOUTH AUSTN SCIENCE TEACHERS ASSOC J S	
ATHLETE	MODERN ATHLETE AND COACH NSB	
ATHLETICS	AASIAN ATHLETICS MBNS S NSB	XA
AUDIO	AUDIO VISUAL AUST MBNS S	
AUDIO	AUSTN AUDIO VISUAL NEWS NSTC MBNS CG AC CNB	XA
AUDIOVISUAL	AUDIOVISUAL NEWS SGS	
AUST	ARCHITECTURE AUST AC ST	XA
AUST	ART AND AUST ST AC MSA NSG QS	XA XG
AUST	ASIAN BUR AUST SA	
AUST	AUDIO VISUAL AUST MBNS S	
AUST	CHARTERED ACCOUNTANT IN AUST NSTC ST	XA
AUST	COMMONWEALTH OF AUST GAZETTE ST AC	
AUST	CRAFT AUST ST LOR WEN CNB CG AC QS NSG	XA XG XP
AUST	CYCLE AUST NSTC	XA XP

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